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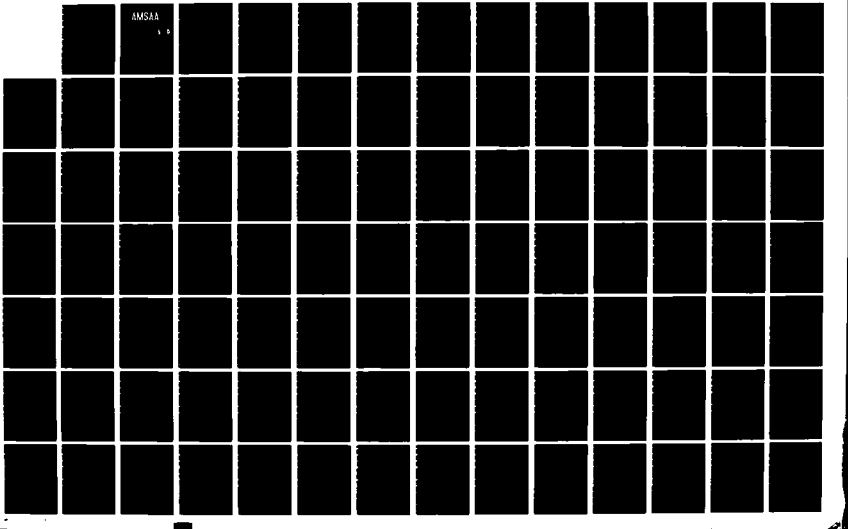

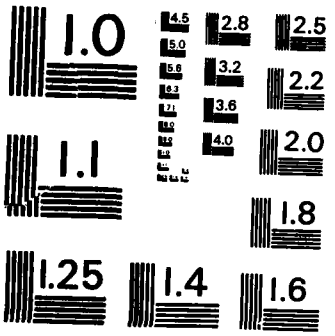

AMSAA

LOGISTICS STUDIES OFFICE

PROJECT NUMBER 068

TECHNICAL REPORT

UNIT MATERIEL FIELDING POINT
EUROPE

OCTOBER 1985

U. S. ARMY MATERIEL SYSTEMS ANALYSIS ACTIVITY
LOGISTICS STUDIES OFFICE
FORT LEE, VIRGINIA 23801

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SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

REPORT DOCUMENTATION PAGE	READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER	2. GOVT ACCESSION NO. AD-A166619	3. RECIPIENT'S CATALOG NUMBER
4. TITLE (and Subtitle) Unit Materiel Fielding Point (UMFP), Europe	5. TYPE OF REPORT & PERIOD COVERED Technical Report
	6. PERFORMING ORG. REPORT NUMBER LSO Project 068
7. AUTHOR(s) Mr. Dave Dryden Mr. Richard Abeyta	8. CONTRACT OR GRANT NUMBER(s)
9. PERFORMING ORGANIZATION NAME AND ADDRESS Director, US Army Materiel Systems Analysis Activity, ATTN: AMXSY-LLSO, Fort Lee, VA 23801-6046	10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS
11. CONTROLLING OFFICE NAME AND ADDRESS Commander, US Army Materiel Command, ATTN: AMCSM-PDU, 5001 Eisenhower Avenue, Alexandria, VA 22333-0001	12. REPORT DATE October 1985 13. NUMBER OF PAGES 246
14. MONITORING AGENCY NAME & ADDRESS (if different from Controlling Office)	15. SECURITY CLASS. (of this report) Unclassified 15a. DECLASSIFICATION/DOWNGRADING SCHEDULE

16. DISTRIBUTION STATEMENT (of this Report)

Approved for public release; distribution unlimited.

17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report)

18. SUPPLEMENTARY NOTES DA308939

The views, opinions, and/or findings contained in this report are those of the authors and should not be construed as an official Department of the Army position, policy, or decision, unless so designated by other documentation.

19. KEY WORDS (Continue on reverse side if necessary and identify by block number)

Supply, Force Modernization, Unit Materiel Fielding

(Army Materiel Command)

20. ABSTRACT (Continue on reverse side if necessary and identify by block number)

Authorized stockage list and prescribed load list materiel lines are consolidated by AMC into unit level packages for transfer to gaining commands under the Total Package/Unit Materiel Fielding concept. This consolidation is performed at Unit Materiel Fielding Points collocated at Red River Army Depot, Sharpe Army Depot and New Cumberland Army Depot (NCAD). This report reviewed the costs and benefits of establishing a UMFP capability in Europe. The report concluded that the UMFP for Europe fieldings should be retained at NCAD.

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SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

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OCTOBER 1985

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ACKNOWLEDGEMENTS

The US Army Systems Analysis Activity (AMSAA) recognizes the following individuals for their contribution to this report: Mr. Keith Mistofi (DESCOM), Mr. William Bakos (NCAD), Mr. Jim Mink (PSCC), Mr. Joseph Paparelli (PSCC), Mr. Michael Morgan (LCA), and Mr. Larry Dryden (COE).

A peer review of this report was conducted by Mr. Wilford Brisendine and by Mr. John Lenassi.

The authors wish to recognize Mrs. Jewel Loftis and Mrs. Constance Myers for their editoral contributions in completing this report.

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UNIT MATERIEL FIELDING POINT - EUROPE

Chapter 1. INTRODUCTION

1. Background.

a. In 1980, the Army Materiel Systems Analysis Activity (AMSAA) participated in an Army Materiel Command (AMC) sponsored study which recommended the establishment of a Package Processing Point (PPP) at New Cumberland Army Depot (NCAD). The PPP was the name given to a facility that would consolidate authorized stockage and prescribed load list items into a single package for shipment to unit level users. The concept was implemented and PPPs were established at Sharpe Army Depot (SHAD), Red River Army Depot (RRAD), and at NCAD.

b. In October 1984, staff officers at AMC-Europe (AMC-E) suggested that the functions performed by the PPP could be done in Europe thus eliminating double handling of the materiels. Letter, AMC, AMCSM-PSP, 13 February 1985, subject: PPP-Europe, tasked AMSAA to identify the costs and benefits of establishing a PPP in Europe.

2. Problem Statement. To determine the costs and benefits associated with the establishment of a Package Processing Point in Europe.

3. Objectives.

a. To identify the costs of establishing a Package Processing Point, now termed a Unit Materiel Fielding Point (UMFP), in Europe.

b. To identify the benefits of establishing a UMFP in Europe.

c. To compare the costs and benefits of establishing a UMFP in Europe with the costs and benefits of retaining an existing UMFP at NCAD.

4. Limits and Scope.

a. The analysis will be limited to equipment and supplies distributed under the Total Package/Unit Materiel Fielding (TP/UMF) process.

b. Projected UMFP workload will cover the time period 1 July 1985 through 30 June 1987. The projections will be based on data maintained and updated by the Depot Systems Command (DESCOM).

c. The analysis will be limited to a review of the NCAD UMPF and fieldings to Europe.

d. The analysis will not address fieldings of classified matriel.

5. Assumptions. The following assumptions were used in the study:

a. That repair parts (class IX) shipments from the Continental United States (CONUS) to a UMFP located in Europe would be by airline of communication (ALOC).

b. That class IX shipments to Europe from the UMFP at NCAD will be by surface transportation.

c. That percentages of lines by storage category, average weights, and average cubes will approximate those found in 1984 shipments.

d. That the discrepancy rates reported by DESCOM in FY 84 will approximate discrepancy rates of future years.

e. That tasks performed by personnel of the UMFP, the staging sites, and the hand-off points will remain those as described in DA Circular 700-85-2 dated June 1985.

f. That the AMC staging sites in Europe will continue to be located at Mainz and Friedrichfeld.

6. Methodology.

a. Data gathering techniques. This study will use site visits, literature searches, interviews, and letter requests to obtain data.

b. Data. Data will include requisition counts, weights, cubes, prices, labor costs, transport costs, discrepancy costs, work standards, and qualitative factors. Data will be acquired in hard copy and magnetic tape formats.

c. Data sources. The sources will include the Logistics Control Activity (LCA), Depot Systems Command (DESCOM), NCAD, Packaging, Storage, and Containerization Center (PSCC), AMC-Europe (AMC-E), AMC, and the Materiel Readiness Support Activity (MRSA).

d. Data analysis. Among the techniques to be used are statistical sampling, point estimation, forecasting, and confidence interval estimation. Data will be processed on a Burroughs B6800 main frame and a Hewlett Packard 125 microcomputer using Fortran, BMDP[1], and VISICALC software[2].

7. Findings and Conclusions.

a. Europe lines account for only 50 percent of NCAD-UMFP workload.

b. The current TP/UMF system fosters multiple handling processes, such that surveillance costs exceed discrepancy cost avoidances.

c. The establishment of Europe UMFP facilities will result in operational savings only when collocated at the staging site. These same savings can be realized by eliminating redundant handling under the current system.

d. Qualitative conditions exist which inhibit operation of Europe facilities.

8. Recommendations. That the UMFP for Europe remain at NCAD.

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[1]BMDP is a statistical software package developed and distributed by the University of California at Los Angeles.

[2]VISICALC is a trademark of a spread sheet software developed by Personal Software, Inc.

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Chapter 2. TOTAL PACKAGE/UNIT MATERIEL FIELDING CONCEPT

1. General.

a. Under the current TP/UMF system, the AMC fielding commands develop proposed materiel requirements which include the following items: the end item/weapon system, the associated support items of equipment (ASIOE), the test, measurement and diagnostic equipment (TMDE), the special tools and test equipment (STTE), and repair parts. These materiel requirements are identified by the fielding command in the Materiel Fielding Plan (MFP). The MFP is forwarded to the gaining Major Command (MACOM) for review. After its review, the gaining command prepares a Mission Support Plan (MSP) which describes how the gaining command will support the end item and which identifies unique support items. Next, using the MSP and MFP, the fielding command develops a materiel requirements list (MRL). The MRL identifies all items that are to be part of the total package of support equipment. It is furnished to the gaining command prior to the convening of a joint coordination meeting between the fielding and gaining commands. Once the MRL is mutually agreed to by both parties, the fielding command begins the requisitioning of all items. AMC provides a copy of the requsitions for authorized items to the gaining command.

b. Class IX items and a starter set of technical publications are routed to the UMFP for consolidation into unit-configured packages. The fielding command monitors the package fill status to determine when an acceptable level of spares/repair parts is available. At least one of each item identified with an essentiality code of C must be present. A code of C identifies repair parts that are essential to the operation of the end item. If the part fails, the end item cannot perform. The item quantities (depth) are negotiated between

the fielding and gaining commands. Breadth and depth (ranges and quantities) are negotiated for items with essentiality codes of D, E, and J. Code D identifies parts which are not essential to the operation of the end item but which are needed for the safety of the operator. Code E items are needed to meet legal or climatic requirements. Code J identifies parts for which replacement may be postponed.

c. Once an acceptable percent fill status is achieved, the fielding command alerts the UMFP and the gaining command to establish a hand-off date. The fielding command then initiates action to ship the parts package, the end items, the TMDE, the ASIOE, and other support equipment to a staging site. At the staging site, the total package is consolidated, inspected, and tested. After the fielding command verifies that the requirements for the fielding are complete, a joint inventory is performed with the gaining command and the materiel is transferred at a hand-off point, which may or may not be the staging site.

2. Description of NCAD UMFP.

a. The Army operates three UMFPs to support equipment fieldings. These are collocated at the area oriented depots of Sharpe, Red River, and New Cumberland. The New Cumberland UMFP supports fieldings to Europe as well as a portion of CONUS. Although operations at all of the UMFPs are similar, the following descriptions are based on those at NCAD.

b. The tasks performed at the UMFP can be classified into three functions: receiving, storing, and packaging. Class IX materiel is received from general storage locations at NCAD and from outside activities. Personnel perform an initial cursory review to detect damaged packages. Damaged items are returned to general storage for replacement. Next, transaction cards are created by an automated data processing system. A transaction known as a "BAY" card is

transmitted via the Deparment of Defense Automatic Address System (DAAS) to the Logistic Control Actvity for entry into the Logistic Intelligence File (LIF). The LIF provides management visibility of TP/UMFP fieldings. The "BAY" card is evidence that materiel has been received at the UMFP. By monitoring the LIF, personnel of the fielding command are continually aware of the percent of fill.

c. Individual lines of materiel are segregated at the receiving point by project code and address code into three storage catagories: bin, rack, and bulk. The project code identifies the end item or weapon system which a line supports. Unique project codes are established by the fielding command for each weapon system that is fielded. The address code identifies the organization in the gaining command which will receive the weapon system. This code is provided to the fielding command by the gaining command.

d. Lines which weigh less than or equal to 70 lbs and which are less than or equal to two cubic feet are selected for bin storage and are placed in plastic trays similar to milk carton containers. These trays proceed over rollers to an entry clerk, who enters the project code and address code into a computer terminal which identifies a predetermined storage location. The tray then proceeds along the roller track until it stops at the prescribed location. Then an employee stands at the end of a row of bins which are moving along a carousel. As the employee reads the location from the package and enters the location code into an entry device, the carousel rotates until the proper bin stops in front of the employee. The employee removes the item from the tray and places it into a storage bin which is marked with the project code and address code of the intended shipment.

e. Lines which exceed maximum binnable size (i.e., greater than 70 pounds or greater than 2 cubic feet) but are less than or equal to 2500 pounds and 40 cubic feet are placed in rack storage. Lines destined for rack storage are placed on a driver-less materiels-handling machine that follows a buried electrical track to the storage location. Personnel remove the packages and place them in storage by project code and address code.

f. Lines weighing greater than 2500 lbs or larger than 40 cubic feet are placed in bulk storage. These lines are moved by cart or forklift to a general storage area.

g. The fielding command continuously monitors the fill rate of each package. When the fielding and gaining commands agree upon the appropriate percent of fill, the fielding command issues a release message to the UMFP. The release message identifies the staging site and the required delivery date. After receipt of the release message, personnel of the UMFP move the individual lines from the storage locations to a packaging area within the UMFP. A computer program produces a packing list of items which are to be included in the package. Checking off items from the list as they proceed, personnel remove the items from their storage containers and place the items into a multi-wall carton. After all items have been placed into this carton, the packer adds a starter set of technical publications to the package; marks the exterior with the project code, address code, and weapon/end item designator; and ships the item to the containerization point for forward movement. A "BAZ" transaction is transmitted through the DAAS to update the LIF and to alert the fielding command of completed actions by the UMFP.

3. Description of the Staging Site.

a. Within CONUS the staging sites and hand-off points are usually located at the installation of the gaining unit. In Europe, AMC has established staging

sites at Mainz Army Depot, at Friedricksfeld, and at Seckenheim. The Seckenheim facility handles fieldings of classified items. AMC has also used facilities at Vilseck and other USAREUR controlled sites for staging.

b. The tasks performed by a staging site can be classified into three functions: receiving, storing, and issuing. Personnel of the staging point receive and inspect end items, ASIOE, TMDE, STTE, as well as the unit-level packages of class IX items prepared by the UMFP. Receiving personnel open the unit-level packages, inventory the packages by comparing the contents against the packing list down to the unit pack, repackage the contents, and reseal the container. Any discrepancies or damaged material is reported to the fielding command for the preparation of discrepancy reports. Personnel of the staging point also send "B8S" cards through the DAAS to update the LIF with notification of materiel receipts. The total time authorized between materiel receipt at the staging point and LIF update is three days.

c. Materiel is stored at the staging site by project code and address code. The maximum amount of time in storage should not exceed 35 days.

4. Description of the Hand-Off Process. The fielding and the gaining commands are responsible for the joint inventory and the transfer of materiel. The fielding command, the gaining command, and the staging site jointly agree on the date for the inventory and transfer. The hand-off team and gaining command open each unit-level package and remove the packing list, which is compared with the customer documentation and any discrepancies are noted. Next, personnel remove individual items from the unit-level package and compare the item to the packing list. If the contents match, personnel send a "D8S" card to DAAS to close out the document record and to update the LIF. If the contents do not match, the hand-off team notes the discrepancy and prepares the necessary

documents to correct the error. Each end item or weapon system is checked to insure that the basic issue items and major components are present. STTE, TMDE, and ASIOE are also inspected. After completion of the review, representatives from the gaining and fielding commands endorse a joint inventory form which signifies that accountability for the end item or weapon system has been transferred.

Chapter 3. APPROACH

1. Methodology. The completion of this study required answers to the following questions:

   a. What are the costs of establishing a UMFP in Europe?

   b. What are the benefits of establishing a UMFP in Europe?

   c. How do the costs and benefits of a European UMFP compare with the costs and benefits of retaining a UMFP at NCAD?

Four categories of costs were reviewed: facility, operating, discrepancy, and transportation. Discussions with the study sponsor and other functional representatives focused the analysis on three alternatives. The first, Alternative A was to retain the UMFP at NCAD. The second, Alternative B, was to establish a central UMFP in Europe. The third, Alternative C, was to establish UMFP facilities at the AMC controlled staging sites of Mainz Army Depot (MZAD) and Friedrichsfeld and to retain some operations at NCAD for those end item fieldings not processed through AMC controlled staging sites. Figure 1 displays these three alternatives under analysis.

2. Data. Required data included workload measured in lines processed per year, storage time in days, weights and cubes per line, lines by storage category, lines by command, and staging site and cost factors.

3. Data Sources.

   a. DESCOM and LCA provided workload information.

   b. LCA provided information on weight and cube.

   c. LCA provided price information.

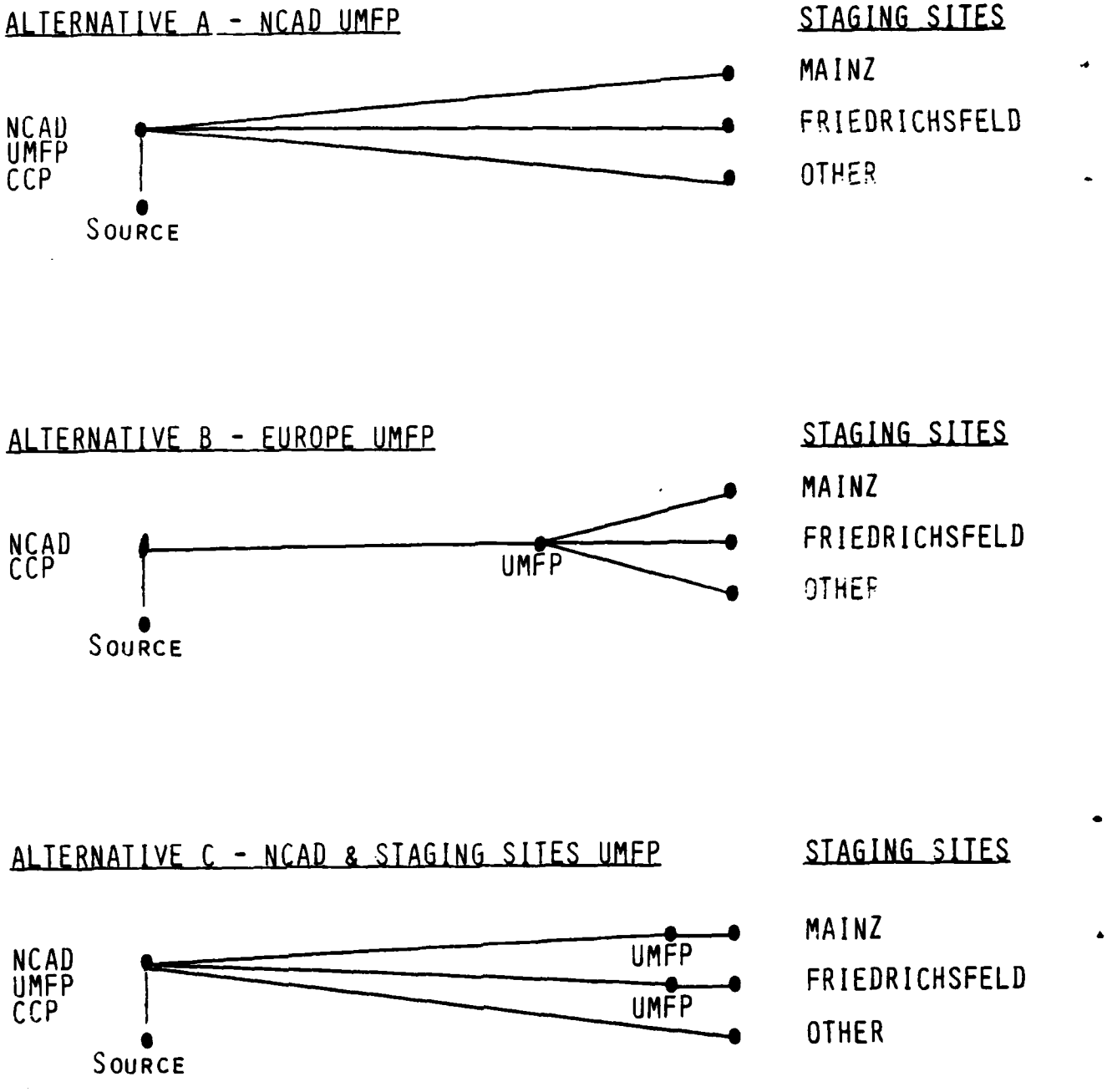

Figure 1. Alternatives

d. PSCC provided storage and discrepancy data.

e. The Corps of Engineers (COE), PSCC, and AMSAA provided cost factors.

f. NCAD, AMC-E, MZAD, DESCOM, and MRSA provided qualitative data used in evaluating benefits and operating procedures.

g. The study also used DA Circular 700-85-2, TP/UMF Policies and Procedures and other publications for source data.

4. Data Analysis. A detailed discussion of each cost category, including data, analysis, and preliminary findings are presented in the following chapters.

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Chapter 4. FACILITY COSTS

1. General. Facility costs are directly related to the size of the building and to the types of equipment needed. Facility size is a function of anticipated workload, anticipated storage time, and anticipated storage item characteristics (i.e., weight and cube).

2. Data. Data used in the study included measures of workload, of storage times, of item sizes, and of costs.

a. Workload data consisted of a forecast measured in number of lines processed.

b. Storage times consisted of a forecast measured in number of days.

c. Item sizes consisted of percentages, weights, and cubes by storage category.

d. Cost tables consisted of dollar estimates for square feet of storage.

3. Data Sources. There were several sources for the data.

a. Workload forecasts were obtained from DESCOM and from LCA. Each quarter DESCOM hosts a conference with participation by each fielding command and by AMC-Europe. The purpose of the conference is to develop workload forecasts for TP/UMF fieldings for a two-year period. The projections used in this analysis were developed at the conference held in April 1985. Historical data maintained in the LIF was obtained for FY 83, FY 84 and for the first two quarters of FY 85. Data were requested by the letter at Appendix A.

b. Storage time data were obtained from LCA. LCA maintains a data base which tracks events by individual lines for TP/UMF requirements. Data were requested by letter at Appendix A.

c. Item sizes were obtained from LCA (See Appendix A).

d. Facility size and cost estimates were obtained from PSCC and the COE. The PSCC provided the data needed to convert workload forecasts into physical requirements. The COE provided the information needed to assign costs to space requirements.

4. Processing Techniques.

a. Workload forecasts received from DESCOM and historical workloads received from LCA are depicted in Table 1.

TABLE 1. Europe Workload Data

COMMAND	FY 83	FY 84	FY 85	FY 86
AMCCOM	0.3	0.4	1.2	7.1
AVSCOM	2.6	0.3	3.4	2.4
CECOM	24.2	25.1	28.4	25.6
MICOM	5.9	18.7	7.4	44.9
TACOM	16.7	18.1	22.8	24.2
TROSCOM	4.6	0.7	0.1	0.5
TOTAL	54.3	63.3	63.3	104.7

(Expressed in thousands of lines)

Information from Table 1 was used to develop a mean annual workload measured in number of lines. The computations can be stated algebraically with the following notation:

$$\bar{L} = L_T \div 4 = \left[\sum_{j=1}^{4} \sum_{i=1}^{6} L_{ij} \right] \left[1/4 \right]$$

where:

$\bar{L}$ = mean number of lines processed to Europe per annum.
L_T = total lines processed by all commands in FY83, FY84, FY85, and FY86.
L_{ij} = lines processed by fielding command i in fiscal year j.
i = { AMCCOM, AVSCOM, CECOM, MICOM, TACOM, TROSCOM }
j = { FY83, FY84, FY85, FY86 }

Applying this formula to Table 1, the mean number of lines per annum, $\bar{L}$, was computed at 71,400, with a standard deviation, s, of 22,600. To account for the relatively small sample size (4 years of data) and significant variability of $\bar{L}$, an upper confidence limit was placed on $\bar{L}$ using the 90% student "t" value of 1.63 as shown below:

$$\text{Workload } (W) = \bar{L} + (1.63 * s)$$

$$= 108{,}200 \text{ lines per annum.}$$

This value of 108,200 should accommodate 90 percent of potential workload. Next, this projected workload was apportioned among the fielding commands and staging sites based on simple percentages in the raw data. For example:

$$W_i = (W)\ (L_i/L_T)$$

where:

W_i = projected annual workload for command i
L_i = total lines processed by command i in FYs 1983-1986
L_T = total lines processed by all commands in FYs 1983-1986

Results are tabulated in Table 2 below. See Appendix A, pages 75-76 for forecasted workload by fielding command. See pages 92-104 for staging site data.

TABLE 2. Annual Workload Forecast

FIELDING COMMAND	TOTAL LINES	STAGING SITES		
		MAINZ	FRIEDRICHSFELD	OTHER
AMCCOM	3.4	3.4	0	0
AVSCOM	3.3	0	0	3.3
CECOM	39.1	0	39.1	0
MICOM	29.1	0	7.0	22.1
TACOM	31.0	10.8	0	20.2
TROSCOM	2.3	0	2.3	0
TOTAL	108.2	14.2	48.4	45.6

(EXPRESSED IN THOUSANDS OF LINES)

b. Storage times were obtained from LCA. Storage times were separated into two segments. The first segment involves storage time at the UMFP. This consists of the time elapsed from the date that a line is received at the UMFP until the date the materiel is shipped from the UMFP. The second time segment involves the storage time at the staging site. It consists of the the time elapsed from the date the materiel is received at the staging site to the date the materiel is delivered to the gaining command. Storage times are depicted at Table 3.

TABLE 3. Storage Time Distribution

DAYS	UMFP LINES		STAGING SITE LINES	
	PERCENT	CUM PERCENT	PERCENT	CUM PERCENT
0 -55	16	16	92	92
56-111	45	61	7	99
112-167	24	85	1	100
168-223	4	89	0	100
224-279	8	97	0	100
280-335	0	97	0	100
336-391	1	98	0	100
392-447	1	99	0	100
448-503	1	100	0	100
504<	0	100	0	100

Mean storage time per line at UMFP is 112 days (Ref App A, pp 54-60).
Mean storage time at staging site is 29 days.

c. Item sizes were developed from information received from LCA. LCA provided magnetic tapes which contained a record of all class IX shipments made in 1984. The tapes included the following data elements: shipping command, item price, item weight, item cube, and line quantity. The data was downloaded and segregated into separate files by shipping command. Extended prices,

extended weights and extended cubes were computed. The data was further subdivided into three categories of storage for each fielding command: bin, rack, and bulk. Bin storage lines are those lines which weigh less than 70 pounds and occupy less than 2 cubic feet of space. Rack storage lines exceed bin standards (greater than 70 pounds or 2 cubic feet) but stay within rack standards (less than 2500 pounds and 40 cubic feet). Bulk storage lines are those weighing more than 2,500 pounds or those occupying more than 40 cubic feet. The result of the storage analysis is shown in Tables 4 and 5. Detailed analysis is at Appendix B.

TABLE 4. Stratification of Lines by Storage Category
(Median Values)

FIELDING COMMAND	MEDIAN VALUES								
	BIN			RACK			BULK		
	PER CENT	MEDIAN CUBE	MEDIAN WEIGHT	PER CENT	MEDIAN CUBE	MEDIAN WEIGHT	PER CENT	MEDIAN CUBE	MEDIAN WEIGHT
AMCCOM	91	0.04	0.85	8	4.45	74.5	1	71.63	634.5
AVSCOM	86	0.12	1.74	12	4.69	41.1	2	78.36	640.0
CECOM	90	0.05	1.15	10	3.59	100.0	0	0	0
MICOM	85	0.12	1.40	13	4.49	57.5	2	53.43	384.0
TACOM	68	0.19	5.32	28	5.05	106.4	4	95.20	2336.0
TROSCOM	87	0.27	1.96	12	6.00	80.0	1	68.84	593.5

Volume measured in cubic feet. Weight measured in pounds.

TABLE 5. Stratification of Lines by Storage Category
(Mean Values)

MEAN VALUES									
FIELDING COMMAND	BIN			RACK			BULK		
	PER CENT	MEAN CUBE	MEAN WEIGHT	PER CENT	MEAN CUBE	MEAN WEIGHT	PER CENT	MEAN CUBE	MEAN WEIGHT
AMCCOM	91	0.19	4.13	8	7.20	113.03	1	115.76	1429.0
AVSCOM	86	0.29	3.99	12	7.37	74.74	2	115.83	832.0
CECOM	90	0.19	5.31	10	5.58	209.88	0	0	0
MICOM	85	0.24	3.35	13	7.36	89.26	2	84.34	479.0
TACOM	68	0.39	11.11	28	8.34	198.72	4	156.79	4218.0
TROSCOM	87	0.12	5.23	12	9.24	123.51	1	112.38	1120.0

Volume measured in cubic feet. Weight measured in pounds.

d. Facility sizes and costs were developed using expert opinions and published cost tables. A visit was made to the AMC PSCC at Tobyhanna Army Depot (TOAD) where personnel were able to convert workload and storage category data into space requirements. The process of conversion is described below.

(1) Bin Storage. Space requirement for bin storage can be considered a function of the number of lines processed, package size, the number of packages stored, and storage time. These relationships are expressed below in semi-notational form with "i" representing fielding command (i.e.; i = 1 = AMCCOM, 2 = AVSCOM, 3 = CECOM, 4 = MICOM, 5 = TACOM, 6 = TROSCOM). Step-by-step calculations are:

(a) Binnable lines per annum (BL_i) = W_i * PB_i,

(b) Binnable lines per period (BP_i) = BL_i * S,

(c) Packages per annum (PK_i) = BP_i ÷ LP_i,

(d) Cubic feet per package (CP_i) = LP_i * CL_i,

(e) # of bin openings per package (BOP_i) = CP_i ÷ 5.25, rounded up to next highest integer value,

(f) # of bin openings (BO) = $\left[\sum_{i=1}^{6} (BOP_i * PK_i) \right] \div .85$,

(g) # of bin aisles (BA) = BO ÷ 4 ÷ 32,

(h) Bin storage area in square feet (SB) = BA * 7 * 68.

where:

CL = Cubic feet per binnable line (see Tables 4 and 5).
LP = Lines per package.
PB = Percent of lines that are binnable (see Tables 4 and 5).
S = Storage time expressed as a fraction of a year (see Table 3).
W = Projected annual workload in lines (see Table 2).
.85 = Efficiency factor (from PSCC).
4 = # of openings per vertical bin section.
5.25 = Usable cubic feet of space per bin opening. Based on bin size of 36" x 18" x 20" at 70% fill efficiency.
7 = Effective bin aisle width. Based on two back-to-back bin shelves plus a 4-foot work aisle.
32 = # of vertical bin sections (columns) per aisle. Based on 48-foot long bin aisles with two back-to-back bin rows per aisle and 3-foot wide bin sections.
68 = Effective bin aisle length. Based on 48-foot long bin aisles plus two turning aisles at 10 feet each.

(2) Rack Storage. Space requirement for rack storage can be treated as a function of the number of rackable lines by command and storage times. Calculation notation is shown below with "i" representing fielding command. Note that this assumes one line per pallet and one pallet per rack opening.

(a) Rackable lines per annum (RL_i) = W_i * PR_i,

(b) Rackable lines per period (RP_i) = RL_i * S,

(c) # of rack openings (RO) = $\left[\sum_{i=1}^{6} RP_i \right] \div .85$,

(d) # of rack aisles (RA) = RO ÷ 4 ÷ 60,

(e) Rack storage area in sq feet (SR) = RA * 16 * 155.

where:

PR = Percent of lines that are rackable (see Tables 4 and 5).
S = Storage time expressed as a fraction of a year (see Table 3).
W = Projected annual workload in lines (see Table 2).
.85 = Efficiency factor (from PSCC).
4 = # of racks per column.
16 = Effective rack aisle width. Based on two back-to-back 4-foot deep racks plus an 8-foot forklift aisle.

60 = # of rack columns per aisle. Based on 135-foot long rack aisles with two back-to-back rows per aisle and 4.5-foot wide rack openings.
155 = Effective rack aisle length. Based on 135 feet of racks plus two turning aisles at 10 feet each.

(3) Bulk Storage. This storage area is required for oversized (larger than pallet) items. It is a function of the number of bulk lines processed, the time in storage and storage conversion factors as explained below. Again, "i" represents fielding command.

(a) Bulk lines per annum (KL_i) = W_i * PK_i.

(b) Bulk lines per period (KP_i) = KL_i * S.

(c) Tons per annum (T_i) = KP_i * WGT_i ÷ 2000.

(d) Bulk storage area in sq ft (SK) = $\sum_{i=1}^{6} (T_i * ST_i) \div V_i$.

where:

PK = Percent of lines that are bulk in nature (see Tables 4 and 5).
S = Storage time expressed as a fraction of a year (see Table 3).
ST = Square feet per ton (from DESCOM 328 report).
W = Projected annual workload in lines (see Table 2).
WGT = Weight per line in pounds (see Tables 4 and 5).
V = Net-to-gross variance (from DESCOM 328 report).

(4) Other Space Requirements. The amount of other space requirements includes office/toilet space, receiving and shipping space, and conveyer receiving to bin area. These were calculated as follows (in square feet):

(a) conveyor space (SC) = 1000.

(b) Receiving and shipping space (SS) = .10 * (SB+SR+SK).

(c) Office space (SO) = .05 (SB+SR+SK).

where:

SB, SR, SK = Storage space requirements for binnable, for rackable, and for bulk lines respectively.

(5) Total Space. Using previous notation, the total space requirements were computed as follows: Total Space (ST) = SB+SR+SK+SC+SS+SO. Results of space computations, by fielding command are at Appendix C.

e. Using VISICALC software, a program was developed to compute facility sizes for the various alternatives using mean and median weight/cube values and varying time factors. Since the data of the weights/cubes were extremely positively skewed, the mean (median) values were used to develop high (low) estimates. Storage times also varied. At central sites such as NCAD and central Europe it was assumed that storage times for unit level packages would approximate the mean value of 112 days (see Table 3). At sites where the UMFP would be collocated with the staging point, it was assumed that the storage time would equal the 112 days for the existing UMFP plus the 29 days for the staging point or 141 days total. Data used in the sizing process can be located in the following tables:

Table 2. Workload in Annual Lines by Staging Site and Fielding Command

Table 3. Storage Times

Tables 4&5. Percent Binnable, Rackable, and Bulk Lines; Cubes and Weights

Results of the sizing process are depicted below in Table 6. Individual analyses are attached at Appendix C.

TABLE 6. New Facilities Requirements

ALTERNATIVE	UMFP LOCATION	ESTIMATED WORKLOAD IN LINES	SQUARE FEET REQUIRED	
			(Low Estimate)	(High Estimate)
A	NCAD	108,000	EXISTING FACILITY	EXISTING FACILITY
B	CENTRAL EUROPE	108,000	93,876	103,981
C	MAINZ	14,200	25,672	29,972
	FRIED	48,200	31,301	31,407
	NCAD	45,600	EXISTING FACILITY	EXISTING FACILITY

f. Equipment requirements were developed and costs were provided by PSCC. The equipment included racks, bins, conveyers, vehicles, and carts. The following equipment was considered necessary for each alternative:

(1) Conveyer between receiving point and bins at a cost of $95,000.

(2) Two vehicles to move materiel to racks at a cost of $45,000 each for a total of $90,000.

(3) Eight carts at $1,000 each for a total of $8,000.

(4) The cost of bins was determined by multiplying the number of bins and their unit cost of $170 each. The number of bins was derived by the formula described in paragraph 3d(1) above.

(5) The number of racks equaled the number of total openings as determined by the results of the computations described in paragraph 3d(2) above. Each rack cost $60.

g. Next, COE was contacted to obtain cost estimating factors for the facility. The COE supplied a publication entitled Engineering Improvement Recommendation System Bulletin 85-02 dated 31 July 1985. This publication provided a dollar cost per square foot, overhead rates, and area cost rates. These factors were used in following function:

Total Cost (TC) = (ST * CS * CF * OH) + CE

where:

TC = Total cost.
ST = Total square feet.
CS = Cost per square foot.
CF = Cost factor for Europe expressed as percent of US costs (.96).
OH = Overhead rate for engineering and administration (1.05).
CE = Cost of equipment.

The total cost of facility and equipment are depicted in Table 7. Facility sizes and costs were developed for each alternative. To review, Alternative A

is to retain the existing UMFP at NCAD. Alternative B is to establish a single UMFP in Europe to process all fieldings to Europe. Alternative C is to establish a UMFP at both Mainz and Friedrichsfeld which are AMC controlled staging sites. Lines destined for staging sites not controlled by AMC such as Vilseck will continue to be supported by NCAD.

TABLE 7. Facilities Cost

ALTERNATIVE	LOCATION	COST
A	NCAD	SUNK
B	CENTRAL EUROPE	$4.7M (HIGH) $4.3M (LOW)
C	MAINZ,NCAD,FRIED	$3.0M (HIGH) $2.9M (LOW)

5. Findings. The minimum cost alternative with respect to facility cost is Alternative A--the existing facility at NCAD where costs are sunk. The next lowest alternative is Alternative C which accommodates the construction of UMFPs at Mainz and Friedrichsfeld with the retention of some work at NCAD. The work retained at NCAD would consist of those lines destined for staging sites in Europe which are not under the control of AMC. Alternative B, which would result in the construction of a single UMFP in Europe to process all fieldings to all staging sites, is the most expensive alternative.

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Chapter 5. OPERATING COSTS

1. General. Operating costs are the labor costs associated with the operation of the UMFP and staging sites. The staging sites were included because the decision on the location of the UMFP affects their operating costs. These costs are a function of workload, labor rates and tasks. Due to the uncertainty of labor source and fluctuation in currency exchange rates, it was assumed that the labor rates in Germany would approximate those at NCAD.

2. Data. Data used in developing operating costs consist of estimated workloads, performance standards, labor rates, and tasks.

a. Estimated workload consisted of a forecast measured in lines and short tons.

b. Tasks were those actions which must be performed to process the materiel (line) at the UMFP and staging site.

c. Performance standards were hours needed to complete the required tasks.

d. Labor rates were the dollar costs per hour.

3. Data Sources. The sources of the data are described below.

a. Estimated workload was obtained from DESCOM and LCA.

b. Tasks were identified by a review of operating procedures and interviews with functional personnel.

c. Performance standards were obtained from DESCOM.

d. Labor rates were obtained from DESCOM.

4. Analysis Techniques.

a. Annual workload forecasts were developed in the manner described in paragraph 3(a) of Chapter 4. In addition to the number of lines, a measure known as short tons was also needed. The short tons were calculated by multiplying the mean and median weights for each line by the forecasted annual

number of lines. This was done for each command. The total pounds were then divided by the value 2000 pounds to derive the total short tons per year which would be processed. The equation is described below with "i" again representing fielding command:

$$TST = \frac{1}{2000} \sum_{i=1}^{6} \left[(BL_i * BW_i) + (RL_i * RW_i) + (KL_i * KW_i) \right]$$

where:

TST = Total short tons per annum.
BL, RL, KL = Binnable, rackable, and bulk lines per annum respectively.
BW, RW, KW = Weight in pounds per binnable, rackable, and bulk line respectively.

The results are displayed in Table 8.

TABLE 8. Operating Workload

ALTERNATIVE	UMFP LOCATION	SHORT-TONS	
		HIGH	LOW
A	NCAD	4549	2478
B	EUROPE	4549	2478
C	MAINZ	1295	706
	FRIED	623	292
	NCAD	2631	1480

b. Tasks were defined by a review of DA circular 700-85-12, TP/UMF Policies and Procedures, of the operating manual for Friedrichsfeld staging site, and by an interview with personnel from AMC-E and the UMFP at NCAD. The tasks were then assigned to each of the alternatives. For example, under the current system an individual line is received twice. One receipt occurs at the UMFP; the second receipt occurs at the staging site. If the UMFP is collocated at the staging site the line will only be received once. A list of the tasks is provided at Table 9.

TABLE 9. Personnel Task Matrix

MANUAL TASKS	ALTERNATIVES A&B		ALTERNATIVE C	
	UMFP	STAGING SITE	UMFP	STAGING SITE
RECEIVE	X	X	X	
INSPECT	X	X	X	
STORE	X	X	X	
INVENTORY		X		X
PACK	X	X	X	
SHIP	X			

c. Performance standards were extracted from AMC report AMCSM-305 dated 30 September 1984. These standards (see Appendix D, summary tables) were applied against the workload forecasts to derive the manhours necessary to complete the mission. The equation is described below.

$$\text{Total manhours (MH)} = \sum_{j=1}^{6} \text{WKLD} * \text{WSTD}_j$$

where:

WKLD = Total projected annual workload for all fielding commands, expressed either in lines (see Table 2) or in short tons (see Table 9).

WSTD_j = Work standard, by task, expressed either in hours per line or in hours per short ton.

j = { tasks | 1=receive, 2=inspect, 3=store, 4=inventory, 5=pack, 6=ship } .

The resulting manhours are displayed below in Table 10.

TABLE 10. Manhours

ALTERNATIVE	UMFP LOCATION	MANHOURS	
		HIGH	LOW
A	NCAD	100643	90084
B	EUROPE	100643	90084
C	MAINZ	9591	8589
	FRIED	25654	25092
	NCAD	45685	39818

d. Labor rates were obtained from DESCOM Report K50BBY8304, dated 30 March 1985. The labor rate per hour was $30.33. This labor rate was multiplied by the total manhours for all tasks, thereby establishing total operating costs for each alternative. Results are summmarized at Table 11 with detailed computations provided at Appendix D.

TABLE 11. Personnel Operating Costs

ALTERNATIVE	LOW ESTIMATE	HIGH ESTIMATE
A	$3.0 MILLION	$3.3 MILLION
B	$3.0 MILLION	$3.3 MILLION
C	$2.5 MILLION	$2.7 MILLION

5. Findings. Alternatives A&B have the same operating costs because the study assumed that the labor rates for NCAD and Europe were equivalent. To the extent that the rates differ, the costs will change. The important consideration, however, is that the manhours consumed are equivalent. Alternative C is the least costly alternative because selected tasks are precluded, thus reducing duplication of effort. Alternative C resulted in a reduction in manhours below the manhours needed for either A or B. These manhour savings could also be achieved in A and B if doctrine were modified to eliminate multiple tasks. In chapter 7 the analysis will address the impact that an elimination of selected surveillance tasks (inspect, inventory) would have on discrepancy costs.

Chapter 6. TRANSPORTATION COSTS

1. General. Under existing doctrine in DA Circular 700-85-12, TP/UMF Policies and Procedures unit level packages for class IX TP/UMF shipments must go by surface transportation. Therefore, the packages sent by the NCAD UMFP should be using water transport to Europe. A review of LCA records for shipments made in FY 85 revealed that 60 percent of the NCAD shipments from the UMFP to Europe were by air. Discussions with personnel of the NCAD UMFP advised that air transport was utilized because fielding commands were not providing sufficient advance shipment notification to permit surface transportation to meet required delivery dates. For this study, however, we assumed that surface transport would apply. Non-TP/UMF shipment of class IX items to Europe is by ALOC except for bulk lines. In completing our analysis we assumed that class IX shipments from CONUS to UMFP facilities in Europe would be by air where possible. To determine transport costs for each alternative we determined the mode, weights, and cubes which would be processed through each facility. Costs were developed by applying transport rates to the estimated workloads.

2. Data. Transportation costs are a function of mode, work load, and rates.

a. Mode is surface (water) and/or air.

b. Workload is expressed as the number of short tons or measurement tons processed per year.

c. Transport rates are expressed as a dollar amount per measurement ton for water transport and as a dollar amount per short ton for air transport.

d. Mean (median) values of weight and cube are by line by command.

3. Data Sources.

a. LCA and DESCOM provided work load data.

b. LCA provided data used in determing the number of short and measurement tons.

c. AMSAA Report No. L-2 dated February 1985, subject: Air Line of Communications for Repair Parts and Medical Supplies, served as a source for transportation rates.

4. Analysis Techniques.

a. For alternative A, all shipments are by surface, such that,

$$TC(A) = \frac{SR}{40} \sum_{i=1}^{6} [(BL_i * BC_i) + (RL_i * RC_i) + (KL_i * KC_i)]$$

b. For alternative B, only bulk shipments are by surface, such that,

$$TC(B) = \frac{SR}{40} \sum_{i=1}^{6} [KL_1 * KC_i] + \frac{AR}{2000} \sum_{i=1}^{6} [(BL_i * BW_i) + (RL_i * RW_i)]$$

c. For alternative C, New Cumberland shipments are all by surface and Friedrichsfeld/Mainz shipments are split, such that,

$$TC(C) = \frac{SR}{40} \sum_{i=1}^{6} [(BL_{ni} * BC_i) + (RL_{ni} * RC_i) + (KL_{ni} * KC_i)]$$

$$+ \frac{SR}{40} \sum_{i=1}^{6} [KL_{mi} * KC_i] + \frac{AR}{2000} \sum_{i=1}^{6} [(BL_{mi} + BW_i) + (RL_{mi} * RW_i)]$$

where:

SR = Transportation rate for surface (sea) shipment.
AR = Transportation rate for air shipment.
BL, RL, KL = Number of binnable, rackable, and bulk lines per annum.
BC, RC, KC = Cubic feet per binnable, rackable, and bulk line.
BW, RW, KW = Weight in pounds per binnable, rackable, and bulk line.
BL_n, RL_n, KL_n = Number of binnable, rackable, and bulk lines processed by NCAD UMFP under option C.
BL_m, RL_m, KL_m = Number of binnable, rackable, and bulk lines processed by Mainz/Friedrichsfeld UMFP under option C.
40 = Factor that converts cubic feet into measurement tons.
2000 = Factor that converts pounds into short tons.

d. Transport costs were computed for each facility and summarized for each alternative. A high estimate of costs was developed using mean weights and cubes and a low estimate of costs was developed using median weights and cubes. The results are shown in Table 12. Detailed calculations are included at Appendix E.

TABLE 12. Transportation Costs

ALTERNATIVE	COST	
	LOW	HIGH
A	$306 THOUS	$609 THOUS
B	$355 THOUS	$635 THOUS
C	$335 THOUS	$640 THOUS

5. Findings. The total of short tons plus measurement tons are the same for each alternative. Because Alternative A assumed that the transportation of shipments would be by surface in accordance with current doctrine, it was the least costly alternative. Alternative B which assumed that ALOC would be used for all but bulk sized shipments was the next least costly alternative. Alternative C which specified the use of ALOC for shipments to Mainz and Friedrichsfeld and the use of surface transport from NCAD to other non-AMC staging sites was the most costly alternative with respect to transportation.

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Chapter 7. DISCREPANCY COSTS

1. General.

a. Shipment discrepancies are errors detected by receiving elements. Errors include conditions such as shipment of wrong items, errors in quantity (overage or shortage), errors in shipping documentation, and damaged items. These errors are reported by the user on the SF 364, Report of Discrepancy.

b. As noted in Chapter 2, class IX items issued under the TP/UMF concept undergo several screening steps. The initial screening occurs when items are received by the UMFP. A second screening occurs when the UMFP loads the class IX items into the multi-wall cartons for shipment to the staging point. A third review is made when the staging point performs its inventory against the packing list. The final review is performed during the joint inventory of gaining and fielding commands prior to hand-off.

c. Intuitively it would appear that, as more reviews which are conducted, the greater the likelihood that shipment discrepancies would be detected. Experience under the current TP/UMF process reveals the discrepant shipments are being detected and resolved at NCAD prior to material movement to Europe. During the period FY 83 - FY 85, the UMFP at NCAD detected discrepancies at a rate ranging from 0.13 to 0.23 percent of lines received. The NCAD UMFP indicated that no discrepancies were reported on shipments processed through the UMFP. In FY 84, users of normal shipments reported a discrepancy rate of 0.3 percent of lines received. This study assumed that collocating the UMFP at staging sites in Europe would result in a discrepancy rate which approximates the 0.3 per cent rate experienced for normal shipments.

d. There are two types of costs incurred with discrepancies. First, there is the cost attributed to damaged or lost items. Second, there are administrative expenses associated with the review and correction of discrepancies. Our analysis addressed both costs.

2. Data. Data used in deriving discrepancy costs included:

a. The estimated annual workload expressed in dollars.

b. The mean (median) dollar value per line by command and storage category.

c. The discrepancy rates for UMFP and normal shipments.

d. The loss rate attributed to discrepancies.

e. The administrative cost for resolving discrepancies.

3. Data Sources.

a. The estimated annual workload was obtained from DESCOM and LCA.

b. The mean (median) dollar values were obtained from LCA.

c. The discrepancy rate for UMFP shipments was obtained from NCAD; the discrepancy rate for normal shipments was obtained from PSCC.

e. The administrative cost for resolving discrepancies was obtained from AMC.

4. Processing Techniques.

a. The estimated annual workload expressed in dollars is a function of the number of lines and the extended dollar value of the lines. It was calculated as follows:

$$D = \sum_{i=1}^{6} BL_i * BD_i + \sum_{i=1}^{6} RL_i * RD_i + \sum_{i=1}^{6} KL_i * KD_i$$

where:

D = Extended dollar value of annual lines processed.
BL, RL, KL = Number of binnable, rackable, and bulk lines processed per year, respectively.
BD, RD, KD = Dollar value per binnable, rackable, and bulk line, respectively.
i = Fielding command.

b. The estimated materiel loss is a function of the extended dollar value of lines processed and the discrepancy rate expressed as follows:

ML=DR*D*LR

where:

ML = dollar amount of materiel losses per year
DR = discrepancy rate expressed as a per cent of total shipments (see Appendix F)
D = extended dollar value of annual lines processed
LR = loss rate expressed as a per cent of discrepant lines (see Appendix F)

c. The estimated administrative cost is based upon a rate of $50 per discrepant line, expressed as follows:

$$\text{Administrative cost per year (AC)} = 50 * DR \sum_{i=1}^{6} (BL_i + RL_i + KL_i)$$

where:

DL = number of discrpeant lines received per year
DR = discrepancy rate expressed as a percent of total shipments
BL, RL, KL = Number of binnable, rackable, and bulk lines per year, respectively.
i = fielding commands

d. The total discrepancy cost is a function of materiel losses and administrative cost expressed as follows:

TDC = AC+ML

where:

TDC = total discrepancy costs
AC = administrative costs
ML = materiel losses

e. The total discrepancy costs were calculated for each alternative. High (low) estimates were developed using mean (median) dollar values per line. The results are displayed at Table 13, with detailed computations at Appendix F.

TABLE 13. Discrepancy Costs

ALTERNATIVE	TOTAL COST	
	LOW	HIGH
A	$129127	$212205
B	$168427	$276789
C	$141372	$236257

5. Findings. The inspection performed on items received at the UMFP results in a lower discrepancy rate and smaller dollar loss. Therefore, Alternative A which screens all UMFP shipments prior to consolidation and movement to Europe is the least cost alternative with respect to dollar value of discrepancy losses. Alternative C which retains some shipments through the UMFP at NCAD incurs less costs than Alternative B, the most costly alternative. There exists a trade-off between operating costs and discrepancy costs. The multiple surveillance tasks which exist under the current operating procedures do result in reduced discrepancy costs. It appears, however, that the savings in discrepancy cost is less than the additional operating costs incurred in reducing these discrepancies. If duplicate surveillance tasks (inspection, inventory, packing) were eliminated, operating costs would be reduced by approximately $750,000 while discrepancy costs would be increased by about $100,000. These savings must be compared to the non-quantifiable goodwill or confidence that users maintain with the shippers of quality packages. The additional surveillance costs may well be justified by the additional goodwill is maintained or created.

Chapter 8. OTHER FACTORS

1. General. There are factors other than costs which must be considered in the comparison of alternatives. These factors include both obstacles and inducements supporting the competing alternatives.

2. Data.

a. Procedures and operating guidance.

b. Views and comments from functional personnel. These views are commonly referred to as expert opinion.

c. Historical and projected workloads expressed in lines processed.

3. Data Sources.

a. DA Circular 700-85-2, TP/UMF Policies and Procedures, for procedures.

b. Functional representatives of AMC, AMC-E, NCAD, DESCOM, and MZAD for expert views and comments.

c. LCA and DESCOM for workload data.

4. Processing Techniques.

a. Site visits were made to DESCOM, NCAD, and PSCC, where interviews were conducted and results recorded.

b. A site visit was made to the quarterly UMFP workload conference held in April 1985. Personnel from AMC-E and MZAD were interviewed and results recorded.

c. Tasking letters were forwarded to LCA and DESCOM to obtain workload data. Results are displayed in Tables 14 & 15.

TABLE 14. Workload Projections by Staging Site

STAGING SITE	FY 1Q86	FY 2Q86	FY 3Q86	FY 4Q86	FY 1Q87	FY 2Q87
MAINZ	12359	5658	5790	2237	5999	1968
FRIED	16501	8293	3601	8886	5605	792
OTHER	18771	5931	9101	15037	14329	19043
TOTAL	47631	19882	18492	26160	25933	21803

Source: DESCOM

TABLE 15. Historical Workload of UMFP at NCAD

FISCAL YEAR	NUMBER OF LINES	
	EUROPE	CONUS
FY-83	57629	36855
FY-84	80099	74759
FY-85*	28799	53035
TOTAL	166527	164649

*First two quarters only
Source: LCA

5. Findings.

a. Space is limited in Europe. Facilities do not currently exist which can be converted to a UMFP operation. Land for new construction is in short supply.

b. German nationals are restricted by law from handling classified, radioactive, and hazardous material. Approximately one percent of the lines processed by the UMFP fall within these categories.

c. The flexibilty to adjust delivery schedule and destination exists to a greater degree with a CONUS based UMFP than would exist in an overseas based

UMFP. This is especially true when diversions must be effected between commands located within different geographic zones.

d. Discrepancies are more easily resolved at CONUS based UMFPs because the distances between supply sources and Europe is so much greater.

e. The UMFP operates under computer software which is part of the Standard Depot System (SDS) which is not yet available in Europe.

f. There exists a variance in quarterly workload which would create operating inefficiences at decentralized sites. Table 14 displays this variability. For example, the forecasted work for Friedrichsfeld ranges from a high of 16500 lines in 1QFY86 to a low of 792 lines in 2QFY87, a change of 95 per cent. Total workload for Europe ranges from a high of 47631 lines in 1Q86 to a low of 18492 lines in 3Q86, a change of 61 per cent. Since the existing UMFP at NCAD handles both Europe and CONUS fieldings as well as special projects, it is better able to plan for and cope with this variability.

g. The work at the UMFP at NCAD is divided evenly between Europe and CONUS lines as displayed in Table 15. A UMFP will be needed at NCAD even if the European work is transferred to sites overseas.

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Chapter 9. FINDINGS, CONCLUSIONS, AND RECOMMENDATION

1. Summary of Findings. To briefly reiterate, the three alternatives under analysis were "A," retention of the UMFP at NCAD, "B," establishment of a central UMFP in Europe, and "C," establishment of UMFPs at each AMC controlled staging site in Europe. Note that alternative C retains a portion of Europe workload at NCAD.

a. Estimated costs for these three alternatives, with "A" as a baseline, are detailed in the previous chapters and summarized below in Table 16.

TABLE 16. Cost Comparison (In Million Dollars)

	FIXED COST	RECURRING COST			
ALTERNATIVE	FACILITY COST	TRANSPORT COST	OPERATING COST	DISCREPANCY COST	TOTAL RECUR
A-LOW EST.	SUNK	.306	3.005	.129	3.435
HIGH EST.	SUNK	.609	3.358	.212	4.121
B-LOW EST.	4.317	.355	3.005	.168	3.523
HIGH EST.	4.710	.635	3.358	.277	4.212
C-LOW EST.	2.877	.355	2.452	.141	2.996
HIGH EST.	3.018	.640	2.700	.236	3.576

(1) From a fixed cost standpoint, the optimum choice is Alternative A with existing facilities in place. Alternative C, which retains a significant portion of Europe workload at NCAD is the next lowest cost alternative. Alternative B, which moves all workload to Europe, has the highest fixed cost.

(2) Transportation costs favor Alternative A which assumes surface (water) shipment. Alternative B is second, with all but bulk shipments by surface. Alternative C is worst, with NCAD shipments by surface and all others by air.

(3) Operating cost savings can be achieved by alternative C because it precludes duplicate handling under the current system. However, these savings can also be achieved by changing current policy. Note that Alternatives A and B assume commensurate labor rates and resultant operating costs.

(4) Discrepancy cost are minimized by Alternative A which screens all UMFP lines prior to consolidation and shipment to Europe. Alternative C, which retains some UMFP consolidation at NCAD is second. Alternative B has the highest discrepancy cost.

b. In addition to quantitative cost factors, there are qualitative factors that have a bearing on the problem under study. These are:

(1) Only fifty percent of NCAD UMFP lines are destined for Europe. The reminder support CONUS fieldings.

(2) Current operating procedures foster multiple handling such that surveillance costs exceed discrepancy cost avoidance.

(3) Available real estate is critically short in Europe.

(4) German nationals are restricted by law from handling classified, radioactive, and hazardous materiel which constitute approximately one percent of workload.

(5) Delivery schedules and destinations can be more easily adjusted if consolidation occurs in CONUS.

(6) Discrepancies are more easily resolved in CONUS.

(7) A large UMFP facility such as that at NCAD which supports Europe and part of CONUS, can best cope with the extreme variability in workload.

2. Conclusions. The above findings support the following conclusions.

a. The current UMFP facility located at NCAD will be needed to support CONUS, irrespective of any decision regarding Europe.

b. Alternative C, which collocates UMFPs at AMC controlled staging sites but retains workload at NCAD to support non-AMC staging sites is preferable to Alternative B, which establishes a single central Europe UMFP.

c. Alternative C cost savings are primarily based on avoidance of duplicate handling under the current system. These same savings can be achieved by changing current policy to prohibit duplicate surveillance tasks.

3. Recommendation. Analysis suggests that the Europe UMFP should remain at NCAD and that policy should be revised to avoid duplicate tasks.

GLOSSARY

Associated Support Items of Equipment (ASIOE) - End items required for the operation, maintenance, and transportation of the system being fielded.

Customer Document Package - Documents used by the gaining command to post receipts or dues-in, and to update supply and financial records.

Fielding Command - The major subordinate command of AMC that is responsible for the fielding of the end item or weapon system.

Gaining Command - The major command (MACOM) designated to receive the end item weapon system being fielded.

Hand-Off Point - The site where personnel of the fielding command transfer custody and accountability of items to personnel of the gaining command.

Hand-Off Team - Personnel of the fielding command who have the responsiblity for completion of tasks necessary to transfer equipment from the fielding command to the gaining command.

Package Processing Point (PPP) - see Unit Materiel Fielding Point.

Project Code - A three position alphanumeric code that is entered into a document to classify and identify specific requirements. Unique project codes are assigned to separate end item or weapon systems. Most of the TP/UMF documents are identified by project codes beginning with the letter "I".

Special Tools and Test Equipment (STTE) - Tools and test equipment which are peculiar to the system being fielded.

Staging Point - The site at which the major items, components, and unit level packages of class IX items are received and stored prior to release to the hand-off point. The staging point and hand-off point can be at the same location.

Technical Publications - Publications necessary to adequately support the equipment being fielded.

Total Package/Unit Materiel Fielding (TP/UMF) - A materiel distribution process that provides a consolidated support package of equipment and materiel for the gaining command.

Unit Materiel Fielding Point (UMFP) - The site where class IX items, technical publications, and special tools are consolidated into unit-level packages.

APPENDIX A

DATA CALLS

Individual data calls were sent to LCA and DESCOM. The data calls, with replies immediately following, are attached. The appendix only contains data which were used in the analysis. Other data received, but not used, are not included herein.

AMXSY-LLSO 14 May 1985

SUBJECT: Data Call for LSO Project 068 (Unit Materiel Fielding Point (UMFP)-Europe)

Commander
Logistic Control Activity
ATTN: AMXLC-LM
Presidio of San Francisco, CA 94129

1. Reference:

a. Letter, AMCSM-PSP, HQ AMC, 13 February 1985, subject: Study of PPP in Europe.

b. Telephone conversation, 6 May 1985, between Dennis Bleiman, LCA, and Dave Dryden, this office.

2. This office, per tasking letter 1a, is conducting a study for the US Army Materiel Command on the feasibility of establishing a Unit Materiel Fielding Point (UMFP) in Europe. An essential element of our analysis will be to review past and future workload as well as time frames associated with requisition processing. LCA's assistance will be needed to capture and provide historical data.

3. Request that LCA provide the information depicted in Enclosure. Information is required by 31 May 1985. LSO points of contact are Dave Dryden, AUTOVON 687-3264/2202, and Richard Abeyta, AUTOVON 687-3569.

4. AMSAA - Providing Leaders the Decisive Edge.

FOR THE DIRECTOR:

Encl

ROBERT J. MELL
LTC, ADA
Acting Manager
Logistics Studies Office

DATA CALL

LSO PROJECT 068

GENERAL DESCRIPTION: Summary printout of New Cumberland Army Depot (NCAD) UMFP workload (see Figure 1).

TIME FRAME: Separate summaries required for projects processed in FY 83, FY 84, and FY 85. Provide individual summary by fiscal year.

DATA ELEMENTS:

1. Project codes - All project codes for TP/UMF requirements processed through the UMFP at NCAD in FY 83, FY 84, and FY 85. Screen project codes BAP, BGE, BGF, BJG, BNY, BRF, BRK, BRL, BPS, JVA, and all project codes beginning with the letter "I". List individual project codes in alphabetic sequence.

2. DOD Activity Address Code (DODAAC) - Unit addresses for those units which have received or are scheduled to receive TP/UMF requirements during time frame cited above by project code. Provide count of number of distinct units by project code. List of DODAACs is not required. Separate counts required for Europe and other non-Europe (including CONUS) geographical DODAACs.

3. Requisitions - Count number of requisitions by Europe and other non-Europe DODAAC by project code.

4. Average number of requisitions per DODAAC - Total number of requisitions divided by the number of DODAACS. Separate counts for Europe and other geographical DODAACs.

5. Requisitions received at UMFP - Count of number of requisitions which were received at NCAD UMFP by project code with summaries by DODAAC category within project code.

6. Requisitions shipped from UMFP - Count of number of requisitions shipped from NCAD UMFP sorted by project code and summarized by DODAAC type within project code.

7. Requisitions which were shipped by passing the UMFP - Count of number of requisitions shipped to DODAAC without processing through the UMFP by project code and DODAAC type.

8. Totals - At bottom of report, include summary totals of each of the above data categories.

FIGURE 1

FY 8* NCAD UMFP REQUISITIONS

	PROJECT CODE	# OF DODAACS	# OF RQNS	AVG RQNS PER DODAAC	UMFP RECEIVED	UMFP SHIPPED	UMFP BYPASSED
EUROPE	BAP ①	10	100	10 ②	100	100	-
OTHER	BAP	5	25	5	20	20	-
TOTAL	BAP	15	125	8 ③	120	120	-
EUROPE	ICA	20	220	11	200	100	1
OTHER	-	-	-	-	-	-	-
TOTAL	ICA	20	220	11	200	100	1
EUROPE	JVA	15	300	20	150	120	10
OTHER	JVA	3	45	15	40	-	5
TOTAL	JVA	18	345	19	190	120	15
EUROPE TOTAL	3	45	620	13 ④	450	320	11
OTHER TOTAL	2	8	70	8	60	20	5
GRAND TOTAL	3	53	690	13 ⑤	510	340	16
	# OF PROJECT CODES	TOTAL # OF DODDACS	TOTAL # OF RQNS	GRAND AVG RQNS PER DODAAC	TOTAL UMFP RECEIVED	TOTAL UMFP SHIPPED	TOTAL UMFP BYPASSED

* Three separate tables: FY 83, FY 84, FY 85 (up to current)

① Project codes in alphabetical order
② 100 ÷ 10 = 10
③ 125 ÷ 15 = 8.33 (truncated)
④ 620 ÷ 45 = 13.78 (truncated)
⑤ 690 ÷ 53 = 13.02 (truncated)

DATA CALL

LSO PROJECT 068

GENERAL DESCRIPTION: Summary printout of NCAD UMFP shipments to Europe by time segments. Europe shipments only considered (see Figure 2).

TIME FRAME: Separate summaries required for projects processed in FY 83, FY 84, and FY 85. Provide individual summary by fiscal year.

DATA ELEMENTS:

1. Project codes - All project codes for TP/UMF requirements processed through the UMFP at NCAD in FY 83, FY 84, and FY 85. Screen project codes BAP, BGE, BGF, BJG, BNY, BRF, BRK, BRL, BPS, JVA, and all project codes beginning with the letter "I". List project codes in alphabetic sequence.

2. Number of DODAACS - Count number of DODAACs for Europe units by project code.

3. Number of requisitions - Count number of requisitions for Europe DODAACs by project code.

4. Time to receipt at UMFP - Average number of days between date of requisition and date of receipt at UMFP for requisitions with Europe DODAACs by project code.

5. Accumulation time UMFP - Average number of days between receipt of requisition at UMFP and release of unit package to Container Consolidation Point (CCP) for shipment. Compute for Europe DODAACS by project code.

6. Intransit time between UMFP and staging site - Average number of days between date unit package is released from NCAD UMFP and date package is received at Europe staging site by project code.

7. Storage time at staging site - Average number of days between receipt at staging site and date of handoff to user by project code.

8. Grand totals and weighted averages - At bottom of report, include the following summary information:

a. Number of project codes - Total number of project codes used in this report.

b. Number of DODAACs - Total number of DODAACS used in this report.

c. Number of requisitions - Total number of requisitions used in report.

d. Time to receipt at UMFP - Average number of days between date of requisition and date of receipt at UMFP; weighted by number of requisitions per project code.

e. Accumulation time UMFP - Average number of days between receipt of requisition at UMFP and release of unit package to CCP; weighted by number of requisitions per project code.

f. Intransit time between UMFP and staging site - Average number of days between date unit package is released from NCAD UMFP and date package is received at Europe staging site; weighted by number of requisitions per project code.

g. Storage time at staging site - Average number of days between receipt at staging site and date of handoff to user; weighted by number of requisitions per project code.

FIGURE 2

TIMES FOR FY 8* NCAD UMFP REQUISITIONS

PROJECT CODE	# OF DODAACS	# OF RQNS	AVERAGE TIME TO RECEIPT AT UMFP(days)	AVERAGE ACCUMULATION TIME AT UMFP(days)	AVERAGE INTRANSIT TIME BETWEEN UMFP AND STAGING SITE(days)	AVERAGE STORAGE TIME AT STAGING SITE(days)
BAP	5	30	10.1 ①	60.2	12.1	30.7
BJG	10	100	12.4	50.9	10.2	20.2
BNY	10	60	14.2	70.8	10.4	15.7
IBB	5	40	10.4	90.7	5.6	30.4
IBD	10	70	5.6	40.4	15.3	20.3
GRAND TOTALS & AVERAGES	5	40	300	10.7 ②	58.7 ③	11.0 ④	21.7 ⑤

* Three separate tables: FY 83, FY 84, FY 85 (up to current)

① Avg time over the 30 requisitions for BAP
② Weighted by # of Rqns; i.e., [(30 x 10.1) + (100 x 12.4) + (60 x 14.2) + (40 x 10.4) + (70 x 5.6)] ÷ 300 = 10.6
③ Weighted by # of Rqns; i.e., [(30 x 60.2) + ... + (70 x 40.4)] ÷ 300
④ Weighted by # of Rqns; i.e., [(30 x 12.1) + ... + (70 x 15.3)] ÷ 300
⑤ Weighted by # of Rqns; i.e., [(30 x 30.7) + ... + (70 x 20.3)] ÷ 300

NOTE: All calculations of time should be to first decimal place and preferably rounded (i.e., 12.69 = 12.7; 12.61 = 12.6) but truncation is acceptable (i.e., 12.69 = 12.6; 12.61 = 12.6).

AVERAGE ACCUMULATION TIME AT UMFP(DAYS)

FY-YEAR	PROJECT CODE	DIFFERENCE	NUMBER OF REQUISITIONS	AVERAGE ACCUMULATION TIME AT UMFP(DAYS)
FY-83	EAP	7,772	151	51
FY-83	BNY	218,362	3,132	70
FY-83	IBC	388,825	2,548	153
FY-83	IBD	215	4	54
FY-83	IBF	91,879	905	101
FY-83	IBG	616	28	22
FY-83	IBJ	3,860	39	99
FY-83	IBK	1,730	24	72
FY-83	IBM	69,328	1,704	41
FY-83	IBP	95,112	1,085	78
FY-83	IBQ	414,183	3,761	110
FY-83	IBK	5,642	107	92
FY-83	IBS	171,249	366	468
FY-83	IBY	513,537	3,842	134
FY-83	IBZ	28,734	355	81
FY-83	ICA	127,185	848	150
FY-83	ICB	8,155	24	340
FY-83	ICG	305,575	5,084	60
FY-83	ICI	318,663	2,900	110
FY-83	ICK	10,007	695	14
FY-83	ICN	3,166	63	50
FY-83	ICQ	34,811	486	72
FY-83	ICS	4,828	141	34
FY-83	ICW	1,865	116	16
FY-83	IDD	1,463	16	91
FY-83	IDL	110	8	14
FY-83	IDO	3,458	72	48
FY-83	IDP	22,486	463	49
FY-83	IDQ	3,651	27	135
FY-83	IDZ	184	14	13
FY-83	IEB	39	1	39
FY-83	IEC	16,841	42	401
FY-83	IEG	20,428	185	110
FY-83	IFL	910,741	3,991	228
FY-83	IFM	19,118	119	161
FY-83	IFN	173	44	4
FY-83	IFS	4,298	10	430
FY-83	IFZ	412	7	59
FY-83	IGA	4,440	74	60
FY-83	IGC	11,044	60	184
FY-83	IGX	3,665	206	18
FY-83	IHJ	86	3	29
FY-83	IHM	4,202	191	22
FY-83	IHN	19,466	810	24
FY-83	IHO	96,603	1,094	88
FY-83	IHQ	771	50	15
FY-83	IHS	24,487	100	245
FY-83	IHZ	246,309	642	384

UMFP SILLY IN EUROPE
AVERAGE ACCUMULATION TIME AT UMFP(DAYS)

FY-YEAR	PROJECT CODE	DIFFERENCE	NUMBER OF REQUISITIONS	AVERAGE ACCUMULATION TIME AT UMFP(DAYS)
FY-83	IIF	73,054	2,163	34
FY-83	IIH	548,407	2,816	195
FY-83	IIL	516	26	20
FY-83	IJD	505,903	4,460	113
FY-83	IJU	440,538	2,125	207
FY-83	ILC	4,730	8	591
FY-83	ILL	2,098	78	27
FY-83	ILX	72,621	404	180
FY-83	ILY	1,665	23	72
FY-83	IMI	501,091	1,245	402
FY-83	IMV	297,242	1,276	233
FY-83	IMX	72,595	807	90
FY-83	INP	175	1	175
FY-83	INT	977	101	10
FY-83	INV	17,757	216	82
FY-83	ICV	246	9	27
FY-83		6,774,091	52,398	129
FY-84	BAP	855	11	78
FY-84	BNY	441,006	4,445	99
FY-84	IBA	72,531	609	119
FY-84	IBC	32,569	178	185
FY-84	IBD	69	1	69
FY-84	IBE	21,855	541	40
FY-84	IBF	15,921	248	64
FY-84	IBJ	20,019	226	89
FY-84	IBK	5,564	96	58
FY-84	IBM	390,866	5,751	68
FY-84	IBN	571	23	25
FY-84	IBP	134,499	805	167
FY-84	IBQ	160,855	993	162
FY-84	IBR	305,774	1,154	265
FY-84	IBS	5,240	10	524
FY-84	IBT	376	26	14
FY-84	IBU	471	19	25
FY-84	IBW	2,252	9	250
FY-84	IBX	183,146	1,791	102
FY-84	IBY	62,452	918	68
FY-84	IBZ	7,622	86	89
FY-84	ICA	204,866	2,047	100
FY-84	ICB	67	4	17
FY-84	ICC	241	1	241
FY-84	ICF	19,986	429	47
FY-84	ICG	598,499	6,514	92
FY-84	ICI	262,448	1,788	147
FY-84	ICJ	9,170	59	162
FY-84	ICK	103,094	2,155	48
FY-84	ICL	128,266	873	147

Enclosure 4

UMFP STUDY IN EUROPE
AVERAGE ACCUMULATION TIME AT UMFP(DAYS)

FY-YEAR	PROJECT CODE	DIFFERENCE	NUMBER OF REQUISITIONS	AVERAGE ACCUMULATION TIME AT UMFP(DAYS)
FY-84	ICM	56,745	835	68
FY-84	ICP	13,769	111	124
FY-84	ICQ	67,670	945	72
FY-84	ICR	973,061	8,657	112
FY-84	ICV	5,474	345	16
FY-84	ICW	14,724	99	149
FY-84	ICX	32,920	323	102
FY-84	IDQ	379	1	379
FY-84	IDR	6,808	105	65
FY-84	IDS	9,128	189	48
FY-84	IDV	4,223	32	132
FY-84	IDW	14,073	616	23
FY-84	IDY	1,818	28	65
FY-84	IEB	5,033	48	188
FY-84	IEC	13,951	43	324
FY-84	IEE	6,335	128	49
FY-84	IEF	38,253	316	121
FY-84	IEG	15,322	144	106
FY-84	IEI	116	1	116
FY-84	IEK	107,869	293	368
FY-84	IFC	25,108	227	111
FY-84	IFL	1,131	16	71
FY-84	IFM	50,052	710	70
FY-84	IFQ	41,868	240	174
FY-84	IFS	36,536	103	355
FY-84	IFZ	21,506	243	89
FY-84	IGA	481	7	69
FY-84	IGD	3,272	7	467
FY-84	IGX	10,525	257	43
FY-84	IHN	6	1	6
FY-84	IHE	157	11	14
FY-84	IHS	8,250	51	162
FY-84	IHZ	620	9	69
FY-84	IIB	107	1	107
FY-84	IIE	700	4	175
FY-84	IIF	687	22	31
FY-84	IIH	21,587	231	93
FY-84	IIL	171	2	86
FY-84	IJO	653,891	4,210	155
FY-84	ILC	4,335	10	434
FY-84	ILL	3,280	81	40
FY-84	ILP	4,653	32	145
FY-84	ILV	1,609	37	43
FY-84	ILX	388	11	35
FY-84	ILY	79	1	79
FY-84	IMB	4,266	93	46
FY-84	IME	1,664	6	311
FY-84	IMF	42	1	42

AVERAGE ACCUMULATION TIME AT USEP(DAYS)

FY-YEAR	PROJECT CODE	DIFFERENCE	NUMBER OF REQUISITIONS	AVERAGE ACCUMULATION TIME AT USEP(DAYS)
FY-84	IMI	24,527	120	204
FY-84	IMS	843	22	38
FY-84	IMU	628	2	314
FY-84	IMV	841	18	47
FY-84	IMW	86,269	185	466
FY-84	IMX	315	3	105
FY-84	INP	1,048,162	4,400	238
FY-84	INQ	75,082	661	114
FY-84	INR	39,450	535	74
FY-84	INT	313,056	3,991	78
FY-84	INV	194,562	519	375
FY-84	INY	154,927	681	227
FY-84	INZ	4,910	52	94
FY-84	IOA	5,377	47	200
FY-84	IOH	136,830	823	166
FY-84	IOI	9,401	48	196
FY-84	IOJ	4,175	24	174
FY-84	IOK	36,034	250	144
FY-84	IOL	3,162	27	117
FY-84	IOM	2,607	10	261
FY-84	IOE	192	2	96
FY-84	IOU	158,569	1,233	129
FY-84	IRT	35,017	412	85
FY-84	ITD	9,128	47	194
FY-84	ITL	16,069	104	155
FY-84	ITF	74,092	293	253
FY-84	ITK	125	1	125
FY-84	ITU	3,611	153	24
FY-84	IUE	90,841	1,185	77
FY-84	IUL	187,604	1,781	105
FY-84	IUM	145,368	1,940	75
FY-84	IUN	2,745	25	110
FY-84	IUO	5,041	445	11
FY-84	IUP	156,119	1,639	95
FY-84	IUQ	39,529	944	42
FY-84	IUR	104,538	1,364	77
FY-84	IUS	3,324	55	60
FY-84	IUU	356	11	32
FY-84	IVD	5,609	148	38
FY-84	IVE	3,006	39	77
FY-84	IVL	91	1	91
FY-84	IVO		13	
FY-84	IVV	676	17	40
FY-84	IWZ	2,933	89	33
FY-84	IXD	646	15	43
FY-84	IXJ	13,933	271	51
FY-84	IXK	440	11	40
FY-84	IXL	226	4	57

AVERAGE ACCUMULATION TIME AT USEP(DAYS)

FY-YEAR	PROJECT CODE	DIFFERENCE	NUMBER OF REQUISITIONS	AVERAGE ACCUMULATION TIME AT USEP(DAYS)
FY-84	IYE	6,820	232	29
FY-84	IYS	5,457	94	58
FY-84	IZB	17	2	9
FY-84	IZC	17	2	9
FY-84	IZD	12	2	6
FY-84	IZE	5	1	5
FY-84	IZF	17	2	9
FY-84	IZH	12	1	12
FY-84		8,698,400	76,689	113
FY-85	BAP	46	1	46
FY-85	BNY	121,092	1,564	77
FY-85	BRK	188	1	188
FY-85	IAH	47,246	1,158	41
FY-85	IBA	9,809	130	75
FY-85	IBC	112	1	112
FY-85	IBE	89	4	22
FY-85	IBF	152	2	76
FY-85	IBK	3,082	49	63
FY-85	IBM	65,744	2,067	32
FY-85	IBP	12,897	160	81
FY-85	IBQ	126	6	21
FY-85	IBR	3,874	28	138
FY-85	IBS	392	4	98
FY-85	IBT	51	2	26
FY-85	IBX	41,352	800	52
FY-85	IBY	756	6	126
FY-85	IBZ	152	3	51
FY-85	IBS	20	3	7
FY-85	ICA	57,422	1,094	52
FY-85	ICE	9,668	221	44
FY-85	ICG	155,246	1,050	148
FY-85	ICI	20,369	244	83
FY-85	ICJ	867	14	62
FY-85	ICK	231	6	39
FY-85	ICL	3,880	105	37
FY-85	ICM	252	7	36
FY-85	ICP	3,951	41	96
FY-85	ICQ	19,913	234	85
FY-85	ICR	18,090	752	24
FY-85	ICV	1	1	1
FY-85	ICW	490	7	70
FY-85	ICX	316	7	45
FY-85	ICY	522	18	29
FY-85	IDJ	2,249	107	21
FY-85	IDK	22,849	346	66
FY-85	IDS	10,498	173	61
FY-85	IDV	225	8	28

AVERAGE ACCUMULATION TIME AT UMFP(DAYS)

FY-YEAR	PROJECT CODE	DIFFERENCE	NUMBER OF REQUISITIONS	AVERAGE ACCUMULATION TIME AT UMFP(DAYS)
FY-85	IDW	286	8	36
FY-85	IDY	361	11	33
FY-85	IEF	65	1	65
FY-85	IFG	839	14	60
FY-85	IEK	131	2	66
FY-85	IEX	221	5	44
FY-85	IEY	175	1	175
FY-85	IFB	23,164	333	70
FY-85	IFC	56	4	14
FY-85	IFM	65,333	474	138
FY-85	IFQ	208,371	1,506	138
FY-85	IFZ	2,087	21	99
FY-85	IGX	28	1	28
FY-85	IHS	16	1	16
FY-85	IJD	7,478	70	107
FY-85	IJZ	191	16	12
FY-85	ILC	164	1	164
FY-85	ILD	75	9	8
FY-85	ILP	12,586	185	68
FY-85	ILV	3,855	112	34
FY-85	IMW	113	3	38
FY-85	INP	76,290	1,030	74
FY-85	ING	25,639	380	67
FY-85	INK	19,230	264	73
FY-85	INT	12,319	423	29
FY-85	INV	1,618	8	202
FY-85	INY	7,941	158	50
FY-85	INZ	1,502	24	63
FY-85	IOA	797	9	89
FY-85	ION	85,814	676	127
FY-85	IOT	2,641	33	80
FY-85	IOJ	1,924	25	77
FY-85	IOK	3,300	54	61
FY-85	IOL	2,599	51	51
FY-85	IOM	706	11	64
FY-85	IOB	417	35	12
FY-85	IOU	399	20	20
FY-85	IOD	20	1	20
FY-85	IRI	1,095	14	78
FY-85	ISD	29	1	29
FY-85	ITD	131	2	66
FY-85	ITU	614	48	13
FY-85	IUE	6,829	70	97
FY-85	IUL	35,906	876	41
FY-85	IUM	165,859	2,599	64
FY-85	IUN	16,033	234	69
FY-85	IUP	115,050	1,653	72
FY-85	IUG	774	38	20

LMFP STUDY II EUROPE
AVERAGE ACCUMULATION TIME AT UMFP(DAYS)

FY-YEAR	PROJECT CODE	DIFFERENCE	NUMBER OF REQUISITIONS	AVERAGE ACCUMULATION TIME AT UMFP(DAYS)
FY-85	1US	67	1	67
FY-85	1VE	11,547	299	39
FY-85	1VF	2,064	33	63
FY-85	1WU	271	12	23
FY-85	1XJ	2,593	56	46
FY-85	1XK	299	4	75
FY-85	1YS	13,706	364	38
FY-85	1YW	236	25	9
FY-85	1YX	28	1	28
FY-85	1ZB	146	48	3
FY-85	1ZC	31	26	1
FY-85	1ZD	41	20	2
FY-85	1ZL	29	13	2
FY-85	1ZF	1,609	90	18
FY-85	1ZG	459	20	23
FY-85	1ZH	366	8	46
FY-85	1ZJ	2,328	51	46
FY-85	1ZS	12,357	245	50
FY-85	1ZU	2,286	60	38
FY-85	1ZW	2,821	120	24
FY-85	1ZY	5,590	234	24
FY-85	151	34	1	34
FY-85		1,608,158	23,674	68
		17,386,649	152,761	112 (weighted by # of rqns)

STUDY OF UMFP IN EUROPE
AVERAGE STORAGE TIME AT STAGING SITE(DAYS)

FY-YEAR	PROJECT CODE	DIFFERENCE	NUMBER OF REQUISITIONS	AVERAGE STORAGE TIME AT STAGING SITE(DAYS)
FY-83	BAP	15,544	322	48
FY-83	BNY	33,497	1,704	19
FY-83	BRF	792	4	198
FY-83	IBC	32,493	1,712	19
FY-83	IBD	410	21	20
FY-83	IBF	3,680	320	12
FY-83	IBG	78	1	78
FY-83	IBI	1	1	1
FY-83	IBJ	718	16	45
FY-83	IBK	1,747	6	291
FY-83	IBM	33,895	1,125	30
FY-83	IBP	473	32	15
FY-83	IBQ	4,215	281	15
FY-83	IBR	45,805	1,681	27
FY-83	IBS	20	6	3
FY-83	IBY	36,878	467	79
FY-83	IBZ	4,113	236	17
FY-83	ICA	2,720	19	143
FY-83	ICC	80,829	3,309	24
FY-83	ICI	63,900	1,822	35
FY-83	ICK	3,986	235	17
FY-83	ICL	107	1	107
FY-83	ICN	292	93	3
FY-83	ICQ	10,606	117	91
FY-83	ICS	1,227	62	20
FY-83	ICT	49	1	49
FY-83	ICW	3,429	49	70
FY-83	IDC	67	21	3
FY-83	IDK	174	5	35
FY-83	IDO	198	49	4
FY-83	IDP	8,097	472	17
FY-83	IEB		1	
FY-83	IEC	159	16	10
FY-83	IEG	1,092	182	6
FY-83	IEL	9,787	211	46
FY-83	IEM	71	4	18
FY-83	IEN	34	5	7
FY-83	IES	32	16	2
FY-83	IGC	9	1	9
FY-83	IGX	953	3	184
FY-83	IHJ		3	
FY-83	IHM	5,679	60	95
FY-83	IHN	18,590	438	42
FY-83	IHO	8,924	369	24
FY-83	IHQ	2,927	66	44
FY-83	IHS	1,489	18	83
FY-83	IHV	316	36	9
FY-83	IHZ	147	13	11

Enclosure 6

AVERAGE STORAGE TIME AT STAGING SITE(DAYS)

FY-YEAR	PROJECT CODE	DIFFERENCE	NUMBER OF REQUISITIONS	AVERAGE STORAGE TIME AT STAGING SITE(DAYS)
FY-83	IIF	429	4	106
FY-83	IIM	12,273	1,650	7
FY-83	IIL	311	18	17
FY-83	IJC	49,181	2,204	22
FY-83	IJU	2,822	299	9
FY-83	IJV	10	1	10
FY-83	ILL		3	
FY-83	ILP	9	1	9
FY-83	ILY	238	1	238
FY-83	IMI	3,628	156	23
FY-83	IMV	5,194	197	26
FY-83	IMX	3,314	551	6
FY-83	INA	5	1	5
FY-83	INV	3	3	1
FY-83	ILO	15	2	8
FY-83	IOV	186	22	8
FY-83		517,427	21,044	25
FY-84	EAP	516	52	10
FY-84	ENY	100,219	2,848	35
FY-84	GRF	803	2	402
FY-84	IBA	276	2	138
FY-84	IBC	1,970	104	19
FY-84	IBD	90	19	5
FY-84	IBE	2,528	158	16
FY-84	IBF	5,224	169	31
FY-84	IBI	3	4	1
FY-84	IBJ	5,128	108	47
FY-84	IBK	5	2	3
FY-84	IBM	62,477	1,717	36
FY-84	IBP	1,749	160	11
FY-84	IBQ	609	46	13
FY-84	IBR	2,341	165	14
FY-84	IBS	784	28	28
FY-84	IBT	6	1	6
FY-84	IBU	399	2	200
FY-84	IBW	5	5	1
FY-84	IBX	173	2	87
FY-84	IBY	61,645	424	145
FY-84	IBZ	2,057	75	27
FY-84	ICA	5,693	106	53
FY-84	ICC	18	6	3
FY-84	ICD	7	1	7
FY-84	ICG	138,940	5,762	24
FY-84	ICI	29,732	1,208	25
FY-84	ICJ	29	1	29
FY-84	ICK	20,886	1,083	19
FY-84	ICM	12,182	122	100

AVERAGE STORAGE TIME AT STAGING SITE (DAYS)

FY-YEAR	PROJECT CODE	DIFFERENCE	NUMBER OF REQUISITIONS	AVERAGE STORAGE TIME AT STAGING SITE (DAYS)
FY-84	ICN	64	7	9
FY-84	ICQ	16,099	794	20
FY-84	ICR	110,732	1,956	61
FY-84	ICL	137	22	6
FY-84	ICV	1,542	79	20
FY-84	ICW	331	28	12
FY-84	ICX	8,095	206	39
FY-84	IDD	5	2	3
FY-84	IDE	46	2	23
FY-84	IDG	1,259	6	210
FY-84	IDF	504	14	36
FY-84	IDK	354	3	118
FY-84	IDU	8	3	3
FY-84	IDW	27,652	330	84
FY-84	IEB	2	1	2
FY-84	IEC	27	6	5
FY-84	IEE	1,147	230	5
FY-84	IEG	1,182	165	7
FY-84	IEI	384	4	96
FY-84	IEK	4,360	693	6
FY-84	IEM	338	29	12
FY-84	IEY	56	7	8
FY-84	IFA	11	3	4
FY-84	IFB	36	1	36
FY-84	IFC	449	143	3
FY-84	IFL	291	21	14
FY-84	IFM	7,614	264	29
FY-84	IFS	756	117	6
FY-84	IFZ	95	19	5
FY-84	IGC	4,421	111	40
FY-84	IGG	148	5	30
FY-84	IGX	5,763	130	44
FY-84	IHM	222	2	111
FY-84	IHN	321	38	8
FY-84	IHC	48	16	3
FY-84	IHS	671	9	75
FY-84	IHT	56	7	8
FY-84	IHV	1,305	24	54
FY-84	IHZ	13	2	7
FY-84	IIE	1,216	18	68
FY-84	IIG	4,111	70	59
FY-84	IIF	10,054	556	18
FY-84	III	345	36	10
FY-84	IIL	500	13	38
FY-84	IIN	404	5	81
FY-84	IJC	17,175	682	25
FY-84	IJV	249	2	123
FY-84	IJC	3	1	3

AVERAGE STORAGE TIME AT STAGING SITE(DAYS)

FY-YEAR	PROJECT CODE	DIFFERENCE	NUMBER OF REQUISITIONS	AVERAGE STORAGE TIME AT STAGING SITE(DAYS)
FY-84	ILL	1,5FE	47	34
FY-84	ILP	111	4	28
FY-84	IMB	235	2	118
FY-84	IMI	5CC	1E	2F
FY-84	IMM	1	1	1
FY-84	IMT	3C3	1	3C3
FY-84	IML	12,5E4	283	44
FY-84	IMV	2CE	11	24
FY-84	IMX	98E	11C	9
FY-84	INA	3	1	3
FY-84	IND	5E	9	6
FY-84	INP	13,229	269	49
FY-84	INR	18,017	836	22
FY-84	INT	44,259	94C	47
FY-84	INU	1,6C2	41	39
FY-84	INV	9,673	79E	12
FY-84	INY	3,1CE	114	27
FY-84	IOA	1,6E2	3E	44
FY-84	IOC	E9	35	2
FY-84	IOE	1,35E	93	15
FY-84	IOJ	2,196	15	146
FY-84	IOK	3,C69	7F	29
FY-84	IOM	3E	E	5
FY-84	ION	127	16	8
FY-84	IOP	21	7	3
FY-84	IOS	73	11	7
FY-84	IOV	E4	5	17
FY-84	IPE	73E	7	1C5
FY-84	IPG	4	1	4
FY-84	IPI	9E	3	32
FY-84	IQE	54E	5	11C
FY-84	IQG	14E	3	49
FY-84	IQL	E7	1	E7
FY-84	IR	EC	1	6C
FY-84	IRD	E	3	3
FY-84	IRG	13E	E	17
FY-84	IRT	91	11	8
FY-84	IRV	2E	1	2F
FY-84	ISK	E	2	2
FY-84	ISP	E7	1	E7
FY-84	ITE	13E	5C	3
FY-84	ITF	614	67	9
FY-84	ITH	25C	1C	25
FY-84	ITR	111	2	56
FY-84	ITY	2,C51	116	1E
FY-84	IUL	2,995	E4C	4
FY-84	IUI	E	1	6
FY-84	IUK	2	3	1

AVERAGE STORAGE TIME AT STAGING SITE(DAYS)

FY-YEAR	PROJECT CODE	DIFFERENCE	NUMBER OF REQUISITIONS	AVERAGE STORAGE TIME AT STAGING SITE(DAYS)
FY-84	IUM	1,901	30	63
FY-84	IUP	9,207	204	45
FY-84	IUQ	1,210	110	11
FY-84	IVF	66	9	7
FY-84	IVI	55	9	6
FY-84	IVC	147	5	29
FY-84	IVS	3	3	1
FY-84	IVV	618	6	103
FY-84	IWD	174	7	25
FY-84	IWF	837	47	18
FY-84	IWZ	1,126	15	75
FY-84	IXD	394	1	394
FY-84	IXJ	30	3	10
FY-84	IXL	5	1	5
FY-84	IYG	206	35	6
FY-84	IZM	3	1	3
FY-84		833,069	26,598	31
FY-85	BAF	44	9	5
FY-85	BNY	13,669	390	35
FY-85	IBC	8,318	134	62
FY-85	IBD	15,312	368	42
FY-85	IBF	37	2	19
FY-85	IBJ	89	6	15
FY-85	IBK	8	4	2
FY-85	IBM	75,806	1,824	42
FY-85	IBP	134	32	4
FY-85	IBQ	224	20	11
FY-85	IBR	174	6	29
FY-85	IBS	7	1	7
FY-85	IBX	24	5	5
FY-85	IBY	144	53	3
FY-85	IBZ	161	7	23
FY-85	ICA	1,406	69	20
FY-85	ICC	5	1	5
FY-85	ICD	9	1	9
FY-85	ICG	15,133	817	19
FY-85	ICI	434	26	16
FY-85	ICK	146	10	15
FY-85	ICM	4,295	115	37
FY-85	ICN	4	2	2
FY-85	ICO	325	42	8
FY-85	ICR	11,022	456	24
FY-85	ICV	122	21	6
FY-85	ICX	193	4	48
FY-85	ICZ		1	
FY-85	IDC	26	2	13
FY-85	IDP	11	1	11

AVERAGE STORAGE TIME AT STAGING SITE(DAYS)

FY-YEAR	PROJECT CODE	DIFFERENCE	NUMBER OF REGISTRATIONS	AVERAGE STORAGE TIME AT STAGING SITE(DAYS)
FY-85	IDU	2	1	2
FY-85	IDW	1,155	27	44
FY-85	IEC	2	2	1
FY-85	IEE	9	1	9
FY-85	IEG	47	13	4
FY-85	IEK	82	20	4
FY-85	IEM	1,104	3	368
FY-85	IEY	400	11	36
FY-85	IFA	3	1	3
FY-85	IFC	967	42	23
FY-85	IFM	94	19	5
FY-85	IFN	2	2	1
FY-85	IFO	157	27	6
FY-85	IFR	6	2	3
FY-85	IFS	55	9	6
FY-85	IGC	6	1	6
FY-85	IGG	3	1	3
FY-85	IGX	3	1	3
FY-85	IGZ	1	1	1
FY-85	IHA	7	1	7
FY-85	IHL	21	4	5
FY-85	IHS	11	1	11
FY-85	IHV	4	1	4
FY-85	IHZ	7	1	7
FY-85	IIH	474	19	25
FY-85	III	227	54	4
FY-85	IJC	313	36	9
FY-85	IJL	6,637	532	12
FY-85	IJZ	1,756	75	23
FY-85	IJC	3	1	3
FY-85	ILL	21	4	5
FY-85	ILP	355	13	28
FY-85	ILV	3,360	7	480
FY-85	IMB	280	78	4
FY-85	IMC	43	1	43
FY-85	IML	14,927	43	345
FY-85	IMA	1,613	185	9
FY-85	INF	7,852	232	34
FY-85	INC	32-	1	32-
FY-85	INK	8,377	382	22
FY-85	INT	9,655	189	51
FY-85	INV	13,690	200	68
FY-85	INY	574	36	16
FY-85	IOA	16	5	3
FY-85	IOL	16	6	3
FY-85	IOP	510	45	11
FY-85	IOJ	837	9	93
FY-85	IOK	360	12	30

STUDY OF UMMP IN EUROPE
AVERAGE STORAGE TIME AT STAGING SITE(DAYS)

FY-YEAR	PROJECT CODE	DIFFERENCE	NUMBER OF REQUISITIONS	AVERAGE STORAGE TIME AT STAGING SITE(DAYS)
FY-85	IDM	18	4	5
FY-85	IGR	8	1	8
FY-85	IOP	6	1	6
FY-85	IPM	1	1	1
FY-85	IRC	28	4	7
FY-85	IRT	10	2	5
FY-85	ISP	4	2	2
FY-85	ISY	74	7	11
FY-85	ITE	4	1	4
FY-85	ITH	7	3	2
FY-85	IUE	869	221	4
FY-85	IUM	1,038	62	17
FY-85	IUP	1,408	46	31
FY-85	IUQ	528	49	11
FY-85	IUZ	199	37	5
FY-85	IVG	33	3	11
FY-85	IVJ		1	
FY-85	IVS	2	1	2
FY-85	IWZ	33	1	33
FY-85	IXJ	184	25	7
FY-85	IXW	22	7	3
FY-85	IYC	338	106	3
FY-85		228,078	7,379	31
		1,579,172	55,021	29

AMXSY-LLSO 29 May 1985

SUBJECT: LSO Project 068, Evaluation of Establishing a Package Processing Point (PPP) in Europe

Commander
US Army Depot Systems Command
ATTN: AMSDS-SM-SPD
Chambersburg, PA 17201-4170

1. Reference:

a. Letter, AMCSM-PSP, HQ AMC, 13 February 1985, subject: Study of PPP in Europe.

b. Force Mod Packaging Workload Conference of 16, 17, 18 April 1985.

2. Reference 1a tasked AMSAA to perform an evaluation of the establishment of a PPP facility in Europe.

3. At referenced conference, AMSAA personnel met with representatives of USESCOM, HQ AMC, AMC-E, and Mainz Army Depot to discuss the scope and data requirements for the evaluation.

4. The data requirements for AMSAA's study are at Enclosures 1 through 4.

a. Enclosure 1 requests projected workload by staging site and fielding command for FY 85 and FY 86. USESCOM representatives at reference 1b indicated that the data would be available in May 1985.

b. Enclosure 2 requests historical workload data by storage category. This information is needed to design UMFP facilities for European staging sites.

c. Enclosure 3 requests information on current NCAD UMFP. Data is needed to develop cost estimates to create a single facility in Europe that is equivalent to the existing NCAD UMFP.

d. Enclosure 4 requests discrepancy data for normal supply channels and for NCAD UMFP shipments. Data is needed to compare benefits of alternative systems.

AMXSY-LLSO 28 May 1985

SUBJECT: LSO Project 068, Evaluation of Establishing a Package Processing Point (PPP) in Europe

5. Data is requested by 21 June 1985.

6. AMSAA POCs are Mr. David Bryden, AUTOVON 687-3269, or Mr. Richard D. Abeyta, AUTOVON 687-3568.

7. AMSAA - Providing Leaders the Decisive Edge.

FOR THE DIRECTOR:

4 Encl

ROBERT D. BELL
LTC, ADA
Acting Manager
Logistics Studies Office

PROJECTED UMFP WORKLOAD

QUARTER/ FISCAL YEAR	STAGING SITE	FIELDING COMMAND	NUMBER LINES	NUMBER DODAACS	NUMBER PROJECT CODES
3QFY85	Mainz	MICOM CECOM ETC.	XXX XXX	XXX XXX	XXX XXX
	Fredericksfeld	MICOM CECOM ETC.	XXX XXX	XXX XXX	XXX XXX
	Seckenheim	MICOM CECOM ETC.	XXX XXX	XXX XXX	XXX XXX
	Vilseck	MICOM CECOM ETC.			
	Etc.				
4QFY85 . . .					

NCAD UMFP HISTORICAL WORKLOAD

FIELDING COMMAND	FISCAL YEAR	LINES RECEIVED																		PACKAGES SHIPPED
		BINABLE			RACKABLE			HAZARDOUS			RADIOACTIVE			CLASSIFIED			OTHER*			
		NUM	AVG CUBE	AVG STOR TIME	NUM	AVG CUBE	AVG STOR TIME	NUM	AVG CUBE	AVG STOR TIME	NUM	AVG CUBE	AVG STOR TIME	NUM	AVG CUBE	AVG STOR TIME	NUM	AVG CUBE	AVG STOR TIME	
MICOM	FY 83 FY 84 FY 85																			
CECOM	FY 83 FY 84 FY 85																			
.	FY 83																			
.	FY 84																			
.	FY 85																			
	.																			
	.																			
	.																			

*Any other special handling categories, i.e., Bulk, . . .

DESCRIPTION OF NCAD UMFP FACILITY

1. Plant layout. Physical dimensions of the building (i.e., length, width, height) to include blueprint or diagram if available. Indicate portion of building (in square feet with brief description) devoted to the following:

   a. Bin storage.

   b. Rack storage.

   c. Special storage, i.e., hazardous, radioactive, classified, ...

   d. Office space.

   e. Receiving.

   f. Packaging.

   g. Holding/shipping.

   h. Other (please specify).

2. Equipment. Complete list of equipment with price and year of purchase. Include such categories as material handling, storage, data entry/retrieval, other.

3. Storage Capacity. Maximum storage capacity for a) bin, b) rack, c) special storage, measured in both square feet and cubic feet. Maximum capacity is the net space available after subtracting structures, aisles, and other losses.

4. Storage Utilization. Percent of storage capacity that was occupied at a given time. Provide average by quarter for FY 83, FY 84, and FY 85.

5. Utilities. Average monthly usage.

6. Manpower. Personnel requirements by type, to effectively operate the plant at current workload at 1 shift per day, 8 hours per shift, 5 days per week.

NCAD UMFP

DISCREPANCY RATE

FISCAL YEAR	NUMBER LINES RECEIVED AT UMFP	NUMBER DISCREPANCIES REPORTED BY UMFP	NUMBER LINES SHIPPED BY UMFP	NUMBER DISCREPANCIES REPORTED BY STAGING SITES
83				
84				
85				

NCAD TO GERMANY

DISCREPANCY RATE (FREE FLOW)

FISCAL YEAR	TOTAL NUMBER CLASS IX LINES SHIPPED	TOTAL NUMBER CLASS IX DISCREPANCIES REPORTED
83		
84		
85		

DEPARTMENT OF THE ARMY
US ARMY DEPOT SYSTEM COMMAND
CHAMBERSBURG, PENNSYLVANIA 17201

REPLY TO
ATTENTION OF

AMSDS-SM-SPD

SUBJECT: Unit Materiel Fielding Point (UMFP) in Europe

Commander
US Army Materiel Systems Analysis Activity
ATTN: AMXSY-LLSO (Dryden)
Ft. Lee, VA 23801

1. Reference:

a. Message, HQDESCOM, AMSDS-SM-SPD, 241730Z Jun 85, subject: Third Quarterly Force Modernization Packaging Workload Conference, 16-17 July 1985.

b. Telephone conversations between D. Dryden, AMXSY-LLSO, and K. Mostofi, AMSDS-SM-SPD, 24 and 25 June 1985.

c. Message, HQDESCOM, AMSDS-SM-SPD, 112015Z Jun 85, subject: Force Mod Staging Workload for MZAD, September 85-March 87.

d. Message, HQDESCOM, 102015Z Jun 85, subject: Workload Projections for the Tactical Vehicle Staging Facility (TVSF).

e. Message, HQDESCOM, 092015Z/112015Z Jun 85, subject: Workload Projections for the Friedrichsfeld Staging Area (FSA), June 85-March 87.

f. Letter, AMSAA, AMXSY-LLSO, 28 May 1985, subject: LSO Project 068, Evaluation of Establishing a Package Processing Point (PPP) in Europe.

2. Shown below are the gross USAREUR workload data requested in Enclosure 1 of reference 1f, by Fielding Command, for each month/quarter remaining in the current "workload window" (through end of second quarter, FY87). Arrayed are the systems ("Project Codes") scheduled for fielding and the total of ASL/PLL packages ("DODAACS") and lines involved for the particular month or quarter. Both Total Package and Force Mod Packaging systems are included, to the extent that they have been workloaded to us. To permit ready comparison with references 1c, 1d, and 1e, which provide a breakout of workload for each of the Central Staging Sites under our control, only that workload provided to us on or before 10 June 1985 was included in the breakout below; minor corrections to references 1c, 1d, and 1e were provided during reference 1b.

☆ U.S. GOVERNMENT PRINTING OFFICE: 1984—708-000/10006

AMSDS-SM-SPD 2 JUL 85

SUBJECT: Unit Materiel Fielding Point (UMFP) in Europe

FY85:	JUN	JUL	AUG	SEP
TACOM:	4/150/2817	5/109/4275	3/82/1723	6/107/2366
MICOM:	2/5/1565	2/7/479	1/3/55	2/2/369
AMCCOM:	--	--	1/62/218	1/107/936
AVSCOM:	--	--	1/2/1360	--
TROSCOM:	--	1/1/49	--	--
CECOM:	8/108/1509	5/60/9867	9/435/8685	3/59/1030
EMRA:	--	--	--	--

FY86:	OCT	NOV	DEC	JAN
TACOM:	5/124/2489	6/124/2499	6/44/2266	5/53/2910
MICOM:	4/50/23748	1/1/164	1/2/1510	1/2/1510
AMCCOM:	3/186/2092	2/242/3186	4/175/2066	1/107/936
AVSCOM:	--	1/4/2418	--	--
TROSCOM:	1/2/250	--	--	1/6/530
CECOM:	4/12/1237	7/72/2559	3/53/687	8/67/3784
EMRA:	--	--	1/11/460	--

FY86:	FEB	MAR	3Q	4Q
TACOM:	4/33/849	3/53/1123	5/168/8308	6/136/3772
MICOM:	--	1/2/1510	2/11/3565	3/17/12940
AMCCOM:	1/107/936	1/107/936	1/321/2808	--
AVSCOM:	--	--	--	--
TROSCOM:	--	--	--	2/5/501

AMSDS-SM-SPD
SUBJECT: Unit Materiel Fielding Point (UMFP) in Europe 2 JUL 85

CECOM:	4/162/2328	7/60/2530	8/63/3811	9/116/8647
EMRA:	--	1/9/400	--	1/1/300

FY87:	1Q	2Q
TACOM:	9/331/7083	9/237/7541
MICOM:	2/8/1825	2/10/13350
AMCCOM:	2/462/2570	1/20/120
TROSCOM:	1/6/6750	--
CECOM:	5/77/7705	1/6/792
EMRA:	(Not Available)	--

3. As noted during reference 1b, despite the tremendous improvement in the quality of workload input by the Fielding Commands for the 16-17 April 1985 Force Mod Packaging Workload Conference, the AMC community still has some way to go in identifying all Force Mod systems, in stabilizing distribution plans and fielding schedules, and in quantifying what specifically will be fielded, with Force Mod equipment. In numerous cases initial ASL/PLL packages remain "to be determined" or "estimated".

4. Based on input received from the Fielding Commands in preparation for the 16-17 July 1985 Force Mod Packaging Workloading Conference, we anticipate substantial revisions and additions to the projections contained in paragraph 2 above. Accordingly, as discussed during reference 1b and previously, we recommend that representatives from your office attend the upcoming workload conference. Administrative and other details are provided in reference 1a.

5. The remainder of the information requested in reference 1f is being provided, to the extent possible, by NCAD UMFP under separate cover.

AMSDS-SM-SPD
SUBJECT: Unit Materiel Fielding Point (UMFP) in Europe 2 JUL 85

6. HQDESCOM Point of Contact is Keith Mostofi, AUTOVON 238-7935/6407.

7. "DESCOM - Providing Leaders the Decisive Edge."

FOR THE COMMANDER:

for RON HULSCHER
Director for Supply, Ammunition
and Transportation

CF:
CDR, AMC, ATTN: AMCSM-PDU
CDR, AMC-E, ATTN: AMXEU-FA
CDR, NCAD, ATTN: SDSNC-TR

W7

Dale DMS
Perry PS

SDSNC-TR (AMXSY-LLSO/28 May 85) 2d Ind
SUBJECT: LSO Project 068, Evaluation of Establishing a Package Processing Point (PPP) in Europe

DA, HQ, New Cumberland Army Depot, New Cumberland, PA 17070-5001 26 June 1985

TO: U.S. Army Materiel Systems Analysis Activity, Logistics Studies Office, Fort Lee, VA 23801

1. Reference:

a. Telephone conversation between K. Mostofi, HQDESCOM, and W. Bakos, NCAD, UMFP Div, 5 Jun 85.

b. Telephone conversation between R. Abeyta, AMSAA, and W. Bakos, NCAD, UMFP Div, 21 Jun 85.

2. Available information as requested by basic letter, is provided in Enclosures 2 - 4.

3. As discussed in reference 1b, much of the information requested by Exclosure 2 is not available. In addition the discrepancy rate (free flow) requested by Enclosure 4 cannot be provided for Class IX alone. Therefore, information provided is the total number of discrepancies for all classes.

L. M. Kinney

4 Encl
nc

L. N. KINNEY
COL, TC
Directorate for Supply

CF:
CDRAMC, ATTN: AMCSM-PDU
CDRDESCOM, ATTN: AMSDS-SM-SPD

AMSDS-SM-SPD (AMXSY-LLSO/28 May 85) 1st End Mr. Mostofi/sa/AUTOVON 238-7935
SUBJECT: LSO Project 068, Evaluation of Establishing a Package Processing Point (PPP) in Europe

HQ, US Army Depot System Command, Chambersburg, PA 17201-4170 27 JUN 85

TO: Commander, New Cumberland Army Depot, ATTN: SDSNC-TR, New Cumberland, PA 17070-5000

1. Reference:

a. Telephone conversation between K. Mostofi, HQDESCOM, and W. Bakos, NCAD UMFP, 5 June 1985.

b. Telephone conversation between K. Mostofi, HQDESCOM, and R. Abeyta, AMSAA, 31 May 1985.

2. As discussed in reference 1a, request you provide information requested in Enclosures 2-4, as available, direct to AMSAA, with copy furnished to this office. Response to Enclosure 1 is being provided by this office under separate cover.

3. AMSAA was advised in reference 1b that much of the information requested in Enclosure 2 is not available; please provide what data you can. Also note that the categories of information requested in Enclosure 4 are somewhat misleading; what is really requested is a comparison of the overall ROD rate for NCAD shipments to the ROD rate for UMFP shipments.

4. "DESCOM - Providing Leaders the Decisive Edge."

FOR THE COMMANDER:

4 Encl
nc

RON HULSCHER
Director for Supply, Ammunition, and Transportation

CF:
Dir, AMSAA, ATTN: AMXSY-LLSO
CDRAMC, ATTN: AMCSM-PDU

DEPARTMENT OF THE ARMY
U.S. ARMY MATERIEL SYSTEMS ANALYSIS ACTIVITY
LOGISTICS STUDIES OFFICE
FORT LEE, VIRGINIA 23801

REPLY TO
ATTENTION OF

AMXSY-LLSO

28 May 1985

SUBJECT: LSO Project 068, Evaluation of Establishing a Package Processing Point (PPP) in Europe

Commander
US Army Depot Systems Command
ATTN: AMSDS-SM-SPD
Chambersburg, PA 17201-4170

1. Reference:

a. Letter, AMCSM-PSP, HQ AMC, 13 February 1985, subject: Study of PPP in Europe.

b. Force Mod Packaging Workload Conference of 16, 17, 18 April 1985.

2. Reference 1a tasked AMSAA to perform an evaluation of the establishment of a PPP facility in Europe.

3. At referenced conference, AMSAA personnel met with representatives of DESCOM, HQ AMC, AMC-E, and Mainz Army Depot to discuss the scope and data requirements for the evaluation.

4. The data requirements for AMSAA's study are at Enclosures 1 through 4.

a. Enclosure 1 requests projected workload by staging site and fielding command for FY 85 and FY 86. DESCOM representatives at reference 1b indicated that the data would be available in May 1985.

b. Enclosure 2 requests historical workload data by storage category. This information is needed to design UMFP facilities for European staging sites.

c. Enclosure 3 requests information on current NCAD UMFP. Data is needed to develop cost estimates to create a single facility in Europe that is equivalent to the existing NCAD UMFP.

d. Enclosure 4 requests discrepancy data for normal supply channels and for NCAD UMFP shipments. Data is needed to compare benefits of alternative systems.

AMXSY-LLSO 28 May 1985

SUBJECT: LSO Project 068, Evaluation of Establishing a Package Processing Point (PPP) in Europe

5. Data is requested by 21 June 1985.

6. AMSAA POCs are Mr. David Dryden, AUTOVON 687-3269, or Mr. Richard D. Abeyta, AUTOVON 687-3568.

7. AMSAA - Providing Leaders the Decisive Edge.

FOR THE DIRECTOR:

Robert J. Bell

4 Encl

ROBERT J. BELL
LTC, ADA
Acting Manager
Logistics Studies Office

PROJECTED UMFP WORKLOAD

QUARTER/ FISCAL YEAR	STAGING SITE	FIELDING COMMAND	NUMBER LINES	NUMBER DODAACS	NUMBER PROJECT CODES
3QFY85	Mainz	MICOM	XXX	XXX	XXX
		CECOM	XXX	XXX	XXX
		ETC.			
	Fredericksfeld	MICOM	XXX	XXX	XXX
		CECOM	XXX	XXX	XXX
		ETC.			
	Seckenheim	MICOM	XXX	XXX	XXX
		CECOM	XXX	XXX	XXX
		ETC.			
	Vilseck	MICOM			
		CECOM			
		ETC.			
	Etc.				
4QFY85					
.					
.					
.					

NCAD UMFP HISTORICAL WORKLOAD

FIELDING COMMAND	FISCAL YEAR	LINES RECEIVED																		PACKAGES SHIPPED
		BINABLE			RACKABLE			HAZARDOUS			RADIOACTIVE			CLASSIFIED			OTHER*			
		NUM	AVG CUBE	AVG STOR TIME	NUM	AVG CUBE	AVG STOR TIME	NUM	AVG CUBE	AVG STOR TIME	NUM	AVG CUBE	AVG STOR TIME	NUM	AVG CUBE	AVG STOR TIME	NUM	AVG CUBE	AVG STOR TIME	
MICOM	FY 83	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	33
	FY 84	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	104
	FY 85	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	202
CECOM	FY 83	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	175
	FY 84	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	409
	FY 85	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	419
TACOM	FY 83	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	175
	FY 84	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	412
	FY 85	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	660
AVRADCOM	FY 83	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	16
	FY 84	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	0
	FY 85	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	0

*Any other special handling categories, i.e., Bulk, . . .

NCAD UMFP HISTORICAL WORKLOAD

FIELDING COMMAND	FISCAL YEAR	LINES RECEIVED																	PACKAGES SHIPPED
		BINABLE			RACKABLE			HAZARDOUS			RADIOACTIVE			CLASSIFIED			OTHER*			
		NUM	AVG CUBE	AVG STOR TIME	NUM	AVG CUBE	AVG STOR TIME	NUM	AVG CUBE	AVG STOR TIME	NUM	AVG CUBE	AVG STOR TIME	NUM	AVG CUBE	AVG STOR TIME	NUM	AVG CUBE	AVG STOR TIME	
TROSCOM	FY 83	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	19
	FY 84	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	54
	FY 85	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	55
ANCCOM	FY 83	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	14
	FY 84	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	48
	FY 85	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	25
AVSCOM	FY 83	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	4
	FY 84	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	20
	FY 85	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	22
USASPTA	FY 83	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	0
	FY 84	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	20
	FY 85	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	49

*Any other special handling categories, i.e., Bulk, . . .

DESCRIPTION OF NCAD UMFP FACILITY

1. Plant layout. Physical dimensions of the building (i.e., length, width, height) to include blueprint or diagram if available. Indicate portion of building (in square feet with brief description) devoted to the following:

a. Bin storage.

b. Rack storage.

c. Special storage, i.e., hazardous, radioactive, classified, ...

d. Office space.

e. Receiving.

f. Packaging.

g. Holding/shipping.

h. Other (please specify).

2. Equipment. Complete list of equipment with price and year of purchase. Include such categories as material handling, storage, data entry/retrieval, other.

3. Storage Capacity. Maximum storage capacity for a) bin, b) rack, c) special storage, measured in both square feet and cubic feet. Maximum capacity is the net space available after subtracting structures, aisles, and other losses.

4. Storage Utilization. Percent of storage capacity that was occupied at a given time. Provide average by quarter for FY 83, FY 84, and FY 85.

5. Utilities. Average monthly usage.

6. Manpower. Personnel requirements by type, to effectively operate the plant at current workload at 1 shift per day, 8 hours per shift, 5 days per week.

DESCRIPTION OF NCAD UMFP FACILITY

1. Plant Layout

a. Bin Storage

(1) Length - 90'

(2) Width - 5' 3"

(3) Height - 10'

Total Square ft. - 15,120

Description of Bin Storage

Type of Bins - Carrousels
There are 28 carrousels with 90 locations per carrousel
Each location has 5 bins. Max. weight per bin is 70 lbs.

b. Rack Storage

(1) Length - 80'

(2) Width - 200'

(3) Height - 10'

Total Square ft. - 16,000

Description of Rack Storage

Racks are 80' long with 96 locations per row
Each row is 7' wide. Rack storage is used for multiwalls and large items, over 70 lbs.

c. Special Storage

(1) Hazardous Area

(a) Area is 60' X 20' Total 1,200 Squarte ft.

Description of Hazardous Area

Area is used for all hazardous materiel to be packed, stored and shipped.

(2) Security Area

(a) Area is 60' X 120' Total 1,200 Square ft.

Description of Security Area

Area is used for storing pilferage item's. No classified materiel is stored in the UMFP.

(3) Special Projects

(a) Area is 40' X 20' Total 800 Square ft.

Description of Special Projects Area

Area is used for projects with high priority.

d. Office Space

(1) Offices are 8' X 20'

Description: There are eight offices within the Division.

(a) Chief
(b) Secretary
(c) Supply - Clerk
(d) Two Foremans
(e) Quality Assurance
(f) Non-Smoking Break Area
(g) ADP Site

e. Receiving

(1) Length - 260'

(2) Width - 60'

Total Square ft. - 15,600

Description of Receiving Area

Area is used for inchecking all materiel. Materiel is checked and worked up before sent up to Storage.

f. Packing Area

(1) Area Pack Station 40' X 20'

Description of Pack Area

UMFP has 6 (six) pack areas. Once release message is received from the command, materiel is selected, consolidated, inventoried and packed for shipment.

g. Holding/Shipping Area

(1) Area for holding or shipments is 100' X 80'

Total of 8,000 Square ft.

Description of Holding/Shipping Area

Area is used for consolidation of projects and DODAAC's ready for shipment. It is also used for labeling and building of air pallets.

h. Other Areas

(1) ADP Sites

(a) Area were BBC & D6S cards are punched and loaded to the LIF file. Also location receipts (1381) are produced before materiel is sent to Storage, manifests and packing listed are also created at ADP sites.

2. Equipment

(a) Narrow Aisle Forklift

1. Price - $64,000 ea
2. Date purchased - Aug 82

(b) Front Side to Side

1. Price - $100,312
2. Date purchased - May 83

(c) Stretch Wrap Machine

1. Price - $7,995
2. Date purchased - May 82

(d) Drive on Floor Scales

1. Price - $5,035
2. Date purchased - May 82

(e) Small items sortation system

1. Price - $105,000
2. Date purchased - Apr 83

(f) Automatic Guided Vehicle System

1. Price - $27,500
2. Date purchased - Jun 83

(g) Pneumatic Tube System

1. Price - $27,500
2. Date purchased - Apr 83

(h) Bin Carrousels

1. Price - $649,452
2. Date purchased - Feb 83

(i) Transformer

1. Price - $40,000
2. Date purchased - Feb 83

(j) ADP Equipment

1. CRT Screens - 5 ea
2. Line Printer
3. Matrix Printer - 5 ea
4. Card Reader - 3 ea
5. Card Punch
   Total Price $200,000
   Date purchased - NA

3. Storage Capacity - Total Storage Capacity - 65,920 Square ft.

4. Storage Utilization

a. Average per quarter

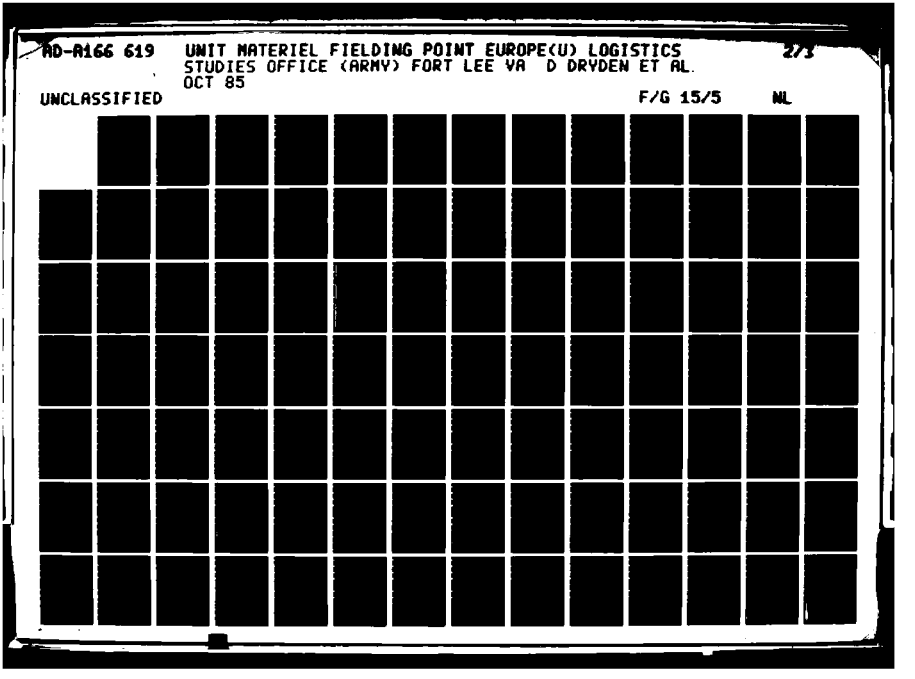
(1) FY 82 - 35%

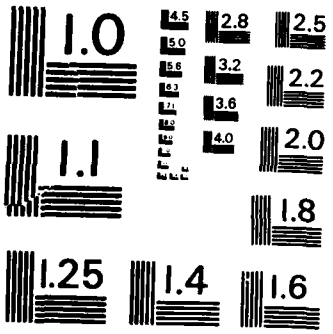
(2) FY 83 - 75%

(3) FY 84 - 100%

(4) FY 85 - 100%

5. Utilities Average Monthly Use - NA


AD-A166 619
UNIT MATERIEL FIELDING POINT EUROPE(U) LOGISTICS
STUDIES OFFICE (ARMY) FORT LEE VA D DRYDEN ET AL.
OCT 85
2/3
UNCLASSIFIED
F/G 15/5
NL



6. Manpower

a. Total number of personnel assigned to UMFP - 42

(1) Chief - 1

(2) Secretary - 1

(3) Warehouse Foreman - 2

FUNCTIONS

Document Processing	- 6
Receiving	- 12
Storage	- 7
Consolidation	- 13

NCAD UMFP

DISCREPANCY RATE

FISCAL YEAR	NUMBER LINES RECEIVED AT UMFP	NUMBER DISCREPANCIES REPORTED BY UMFP	NUMBER LINES SHIPPED BY UMFP	NUMBER DISCREPANCIES REPORTED BY STAGING SITES
83	64,307	153 .2%	39,964	NA
84	85,385	113 .13%	65,582	NA
85	47,384	86 .13%	68,736	NA

NCAD TO GERMANY

DISCREPANCY RATE (FREE FLOW)

FISCAL YEAR	TOTAL NUMBER LINES SHIPPED	TOTAL NUMBER DISCREPANCIES REPORTED
83	NA	5,806
84	2,642,521	5,813 .2%
85	1,674,926	2,736 .16%

File ONE

PRIORITY

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AG	A I	IC	A I	DT	A I	FH		LOGC	SUPVR
SGS	A I	PM	A I	FV	A I	FP		FESA	
IG	A I	CM	A I	FSD	A I	ACC/CF		SECOR	MAR
ACZ	A I	CP	A I	AHN	A I	DS/DFN		CID	
PAO	A I	EE	A I	LCD	A I	MD/KAH		CSC	OIC
DPCA	A I	IS	A I	PFS	A I	300TH		240TH	
OOL	A I	JA	A I	SFS	A I	ARG		SOO	RTR----
PTS	A I	CD	A I	TP	A I	TSA		ADO	
DEH	A I	OS	A I	DOC	A I	ALMC		COM GUARD	CKR----

PCTUZYUW RUEPSR44679 1622339-UUUU--RUFOAGA.
ZNR UUUUU
P 1120157 JUN 85
FM CDRDESCOM CHAMBERSBURG PA //AMSDS-SM-SPD//
TO RUCIAFA/CDRAMCCOM RIA ROCK ISL IL //AMSMC-RDF-F//
RUFDRIA/CDRCECOM FT MONMOUTH NJ //AMSEL-RF-FM-PP//
RUEOPEH/CDREMRA VHFS WARRENTON VA //SELEM-ME-FM-I//
RUCDGDA/CDRMICOM RSA AL //AMSMI-SSDM/SRL//
RUCIFPA/CDRTROSCOM STL MO //AMSTR-SDM//
RUFLWOD/CDRM7AD MAIN/ GE //SDSM7-P/PSF//
RUEOPEG/DIR USASWL VHFS WARRENTON VA //DFLSW-ML//
RUFDNDR/CDRAMC-EUROPE SECKENHEIM GE //AMXEU-FA//
INFO RUKLDAR/CDRAMC ALEX VA //AMCSM-PDU//
RUFOAGA/CDRAMSAA FT LEE VA //AMXSY-LLSO//
RUENANA/CDRNCAD NEW CUMBERLAND PA //SDSNC-TR//
RUFPAHA/CDRLEAD CHAMBERSBURG PA //SDSLE-TG//
RHFCREA/CDRTOAD TOBYHANNA PA //SDSTO-S//
BT
UNCLAS SECTION 001 OF 002
SUBJ: WORKLOAD PROJECTIONS FOR THE FRIEDRICHSFELD STAGING AREA (FSA). JUNE 85-MAR 87
A. LTR. HQDESCOM. AMSDS-SM-SPD. 29 MAY 85. SUBJ: FORCE MODERNIZA-

JUN 12 9 21 AM '85

PAGE 02 RUEPSR44679 UNCLAS
TION PACKAGING WORKLOAD.
B. LTR. AMSAA. AMXSY-LLSO. 28 MAY 85. SUBJ: LSO PROJECT NAR. EVALUATION OF ESTABLISHING A PACKAGE PROCESSING POINT (PPP) IN EUROPE. (NOTAL)
C. LTR. HQDESCOM. AMSDS-SM-SPD. 28 MAY 85. SUBJ: REQUESTS FOR USE OF DESCOM OCONUS STAGING/HANDOFF SITES TO SUPPORT NEW EQUIPMENT FIELDINGS.
D. MSG. HQDESCOM. AMSDS-SM-SPD. 241200Z APR 85. SUBJ: SECOND QUARTERLY FORCE MODERNIZATION PACKAGING WORKLOAD CONFERENCE. 16-17 APR 85.
E. MSG. HQDESCOM. AMSDS-SM-SPD. 241330Z JAN 85. SUBJ: WORKLOAD PROJECTIONS FOR THE FSA. JAN-DEC 85.

PRIORITY

PRIORITY

THIS MSG IS IN THREE PARTS.
PART ONE FOR ALL.
1. IN REF D. WE ADVISED THAT WE WOULD ISSUE AN UPDATE OF OUR INITIAL REF F "TIMELINE" FOR THE FSA. SHOWN BELOW IS THAT UPDATE, BASED ON DATA SUBMITTED BY THE AMC FIELDING COMMANDS FOR THE 16-17 APR 85 FORCE MOD PACKAGING (FMP) WORKLOAD CONF. AS NOTED IN REF D, THIS TIMELINE WILL REMAIN TENTATIVE UNTIL AMC-EUROPE FORMALLY COORDINATES THE FIELDING SCHEDULES WITH USAREUR.

2. THE FOLLOWING SHOWS THE SYSTEMS SCHEDULED FOR FIELDING IN EACH PARTICULAR MONTH/QUARTER. ALL OF THE SYSTEMS ARE CECOM-MANAGED EXCEPT FOR:
A. BACKUP COMPUTER SYSTEM (BUCS)--AMCCOM.
B. POSITION AZIMUTH DETERMINATION SYSTEM (PADS, AN/USW-70) AND TOPOGRAPHICAL SUPPORT SYSTEM (TSS)--TROSCOM.
C. AN/UAS-11 NIGHT SIGHT--MICOM.
D. TRAILBLAZER (AN/TSQ-114A(V)1); AN/TRQ-32(V)1; AND TACJAM (AN/MLQ-34)--FMRA/SWL.
THOSE SYSTEMS PRECEDED BY AN ASTERISK (*) ARE TENTATIVELY ASSIGNED TO THE FSA PENDING COMPLETION OF A FORMAL SUPPORTABILITY ASSESSMENT BY M7AD. AS DISCUSSED IN REF C, THIS ASSESSMENT IS NECESSARY TO ENSURE THAT THE CAPABILITIES OF THE REQUESTED STAGING SITE ARE COMPATIBLE WITH SYSTEM REQUIREMENTS. SHOWN IN PARENTHESES AFTER EACH SYSTEM ARE THE NUMBER OF FIELDINGS AND THE TOTAL NUMBER OF SYSTEMS/END ITEMS INVOLVED. IT IS ANTICIPATED THAT THE NUMBER OF FIELDINGS SHOWN WILL CHANGE IN SUBSEQUENT UPDATES (E.G., FOLLOWING THE 16-17 JUL 85 CONF) AW GUIDANCE PROVIDED IN REF A. DATA ON ASIOE AND ASL/PLL PACKAGES/DENSITY BY FIELDING COMMAND ARE PROVIDED (WHEN AVAILABLE) TO ASSIST M7AD IN WORKLOAD PLANNING FOR THE

FSA AND AMSAA IN COMPLETING STUDY DISCUSSED IN REF B; IT SHOULD BE NOTED THAT THEY ARE VERY INCOMPLETE, ESPECIALLY FROM MAR 86 ON. BECAUSE OF FLUIDITY IN FIELDING PLANS/PACKAGE CONFIGURATIONS, AND IN SOME CASES HAD TO BE ESTIMATED/EXTRAPOLATED FROM FIELDING COMMAND INPUT.
KYAS:

JUN	JUL	AUG	SEP
AN/USM-486(1/1795)	AN/TRQ-35(3/9)	AS-A21A(8/105)A	TD-1288(2/131)
AN/PRM-36(1/1317)	AN/TTC-39(1/2)	AN/PRC-68(A/A1A1A	TD-1289(1/100)
SG-1139(14/33)A	OS-261C(1/338)	AN/UGC-74A(1/139)	AN/TRC-152(1/9)

PRIORITY

PRIORITY

MICROFIX(7/15)A SG-1170(1/338) AN/GRC-193A(4/140)
TD-1288(1/44) PADS(1/25) AN/GRC-213A(3/134)
TD-1289(1/109) AN/GVS-5(1/335)B AN/USM-488(1/102)
C-6709(8/25) TD-1065(1/810)
AN/URM-208(1/104) BUCS(16/394)

ASIOE:	PACKAGES/TOTAL LINES:			
CECOM:	--	2/108	248/800	1/3
AMCCOM:	--	--	--	--
TROSCOM:	--	1/7	--	--
TOTAL:	0	3/111	248/800	1/3

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ASL/PLL:	PACKAGES/TOTAL LINES:			
CECOM:	108/1509	60/9867	435/8685	59/1030
AMCCOM:	--	62/218	--	--
TROSCOM:	--	1/49	--	--
TOTAL:	108/1509	123/10134	435/8685	59/1030

FYRA:

OCT	NOV	DEC	JAN
TCT(1/1)C	TCT(1/3)	TCT(1/7)	TCT(1/7)
TCS(2/8)D	TCS(2/4)	AN/USM-488(1/1383)	TCS(1/2)
AN/TRC-151(1/16)	AN/TRC-151(1/9)	TD-1288(2/117)	AN/TRC-151(1/11)
AN/TRC-152(1/9)	OE-303(6/731)A	*AN/TRQ-32(1/11)	AN/TRC-152(1/9)
*AN/UAS-11(1/195)	AN/URM-200(1/11)A		TD-1069(1/32)
	AN/GRC-193A(1/182)		AN/GRC-193A(1/17)
	AN/GRC-213A(1/174)		AN/USM-488(1/176)
	BUCS(12/90)		AN/USM-490(1/100)

ASICE:	PACKAGES/TOTAL LINES			
CECOM:	19/57	--	--	19/57
FYRA:	--	--	11/11	--
TOTAL:	19/57	--	11/11	19/57

ASL/PLL: PACKAGES/TOTAL LINES

PAGE 04 RUEPSRA4A79 UNCLAS

CECOM:	12/1237	72/2559	53/687	67/3484
AMCCOM:	--	12/36	--	--
FYRA:	--	--	11/440	--
MICOM:	33/1158	--	--	
TOTAL:	45/1275	84/2595	64/1127	67/3484
	FEB	MAR	~~APR~~ 30	~~MAY~~ 40
	TCT(1/2)	TSS(1/49)	TCT(1/2)	TCT(2/14)
AN/TRC-151(1/4)	SG-1219(1/183)		TCS(1/2)	TCS(2/4)

PRIORITY

PRIORITY

AN/TRC-152(2/7)	TCT(1/2)	AN/TRC-151(2/25)	AN/TRC-151(2/27)	
TD-1065(1/360)	TD-1225A(1/50)	TD-128B(1/120)	AN/TRC-152(1/2)	
	AN/TRC-151(2/10)	AN/TSQ-84A(1/4)	AN/TSC-85A(2/10	
	TD-128B(1/118)	AN/GRC-213A(3/42)	AN/GRC-193A(1/91)	
	AN/TSQ-84A(1/2)	SG-1139(12/88)	SG-1139(21/85)	
	*AN/TRQ-32(1/9)		TD-128B(1/120)	
			AN/TSQ- 84A(1/7)	
			*TRAILBLAZER(2/20)	
			PADS(1/6)	

ASIOE:	PACKAGES/TOTAL LINES			
CECOM:	1/3	2/4	8/16E	23/78E
FMRA:	--	9/9	--	5/37

PT
84679

NNNN

PRIORITY

PRIORITY

PT 00251 162/2380Z F/2 PAGE 01

AG	A	I	IC	A	I	DT	A	I	FH	LOGC	SUPVR
SGS	A	I	PM	A	I	EV	A	I	FP	FESA	
IG	A	I	CM	A	I	FSD	A	I	ACC/CE	SECOR	M&R
ACZ	A	I	CP	A	I	ARN	A	I	OS/DFN	CID	
PAO	A	I	EE	A	I	LCD	A	I	MD/KAH	CSC	OTC
OPCA	A	I	IS	A	I	PFS	A	I	300TH	240TH	
DOL	A	I	JA	A	I	SFS	A	I	ARG	SDO	RTR-C5
PTS	A	I	CD	A	I	TP	A	I	TSA	ADO	
DEH	A	I	OS	A	I	DOC	A	I	ALMC	COM GUARD	CKR----

PCTIIZYIIW RUEPSRAAARD 1622331-UUUU--RUEOAGA.
ZNR UUUUUU
P 1120157 JUN 85
FM CDRDESCOM CHAMBERSBURG PA //AMSDS-SM-SPD//
TO RUCIAFB/CDRAMCCOM RIA ROCK ISL IL //AMSMC-RDF-F//
RUEDRIA/CDRCECOM FT MONMOUTH NJ //AMSEL-RF-FM-PP//
RUEOPEH/CDREMRA VHFS WARRENTON VA //SELEM-ME-FM-I//
RUCDGDA/CDRMICOM RSA AL //AMSMI-SSDM/SAL//
RUCIFRA/CDRTROSCOM STL MO //AMSTR-SDM//
RUFLWDD/CDRMZAD MAINZ GE //SDSMZ-P/PSF//
RUEOPEG/DIR USASWL VHFS WARRENTON VA //DFLSW-ML//
RUFGNDR/CDRAMC-EUROPE SECKENHEIM GF //AMXEU-FA//
INFO RUKLDAR/CDRAMC ALEX VA //AMCSM-PDU//
RUEOAGA/CDRAMSAA FT LEE VA //AMXSY-LLSO//
RUEMAMA/CDRNCAD NEW CUMBERLAND PA //SDSNC-TR//
RUEPAHA/CDRLEAD CHAMBERSBURG PA //SDSLE-TG//
RHECREA/CDRTOAD TOBYHANNA PA //SDSTO-S//
BT
UNCLAS FINAL SECTION OF 002

TROSCOM:	--	1/2	--	1/7
TOTAL:	1/3	12/15	8/16	29/102

ASL/PLL/STTE:

PAGE 02 RUEPSRAAARD UNCLAS

CECOM:	162/2328	57/2081E	61/3601E	114/8437E
FMRA:	--	9/800E	--	1/300E
TROSCOM:	--	0(F)	--	1/89
TOTAL:	162/2328	66/2881	61/3601	8886

FY87:

10
AN/TSC-85A(3/6)
AN/TSC-93A(6/30)
AN/TSQ-88A(1/8)
TD-1288(1/106)
*TACJAM(1/10)

20
AN/TSC-85A(2/8)

ASIOE: PACKAGES/TOTAL LINES

PRIORITY

PRIORITY

CECOM:	88/4886	6/88
FMRA:	10/10	--
TOTAL:	98/4896	6/88
ASL/PLL:	PACKAGES/TOTAL LINES	
CECOM:	75/5805	6/792
FMRA:	10/NOT PROVIDED	--

NOTES: A - NO PLL OR ASL WORKLOADED
B - NOT REFLECTED IN CECOM WORKLOAD. BECAUSE OF MIS-

PAGE 03 RUEPSRAAAAO UNCLAS
ADDRESSING OF THESE SHIPMENTS. SOME MATERIEL HAS ALREADY "FREEFLOWED" TO CUSTOMER UNITS. AS A RESULT, ANTICIPATE ONLY PARTIAL FIELDING THROUGH FSA.

C - AN/UYQ-30: ASL/PLL "TO BE DETERMINED"
D - AN/UYQ-19: ASL/PLL "TO BE DETERMINED"
E - ESTIMATED
F - ASL/PLL FOR THE TSS WILL BE PLACED IN SECTION SHELTERS AND SHIPPED DIRECT FROM THE CONTRACTOR; ONLY THE ASIOE (21 GENERATORS OF TWO DIFFERENT TYPES) WILL BE CONSOLIDATED AT THE NCAO UMFP

3. AT THIS TIME, PROJECTED REQUIREMENTS FOR COVERED STORAGE AT THE FSA REMAIN WELL BELOW TOTAL CAPACITY. OPEN STORAGE, ALTHOUGH LIMITED, SHOULD ALSO REMAIN ADEQUATE. IF FIELDING SCHEDULES PROVIDED IN WORKLOAD PROJECTIONS ARE ADHERED TO. WE AGAIN REMIND FIELDING COMMANDS THAT ORGANIC DEPROCESSING FACILITIES FOR WHEELED AND TRACKED VEHICLES, HOWEVER, ARE VIRTUALLY NONEXISTENT AT THE FSA.
4. WE WILL UPDATE THE PARA 2 "TIMELINE" AGAIN IN MID-AUGUST 85, BASED ON THE RESULTS OF THE 16-17 JUL FMP WORKLOAD CONFERENCE. PART TWO FOR AMC-EUROPE.
5. PER AGREEMENT, THE FSA "TIMELINE" IS BEING FORWARDED FOR

PAGE 04 RUEPSRAAAAO UNCLAS
VALIDATION/COORDINATION WITH USAREUR FORCE MOD PERSONNEL.
A. EXPERIENCE HAS SHOWN THAT THE PROCEDURE INFORMALLY COORDINATED BETWEEN AMC-E AND HQDESCOM PERSONNEL, 20-22 FEB, AT MZAO AND USED IN PREPARATION FOR THE 16-17 APR CONF IS UNWIELDY. TO SPEED THE PROCESS, WE HAVE ASKED THE FIELDING COMMANDS IN REF A TO PROVIDE YOU COPIES OF WORKLOAD DATA SHEETS FOR SYSTEMS TO BE FIELDED IN USAREUR. WE WILL CONTINUE, HOWEVER, TO PROVIDE COPIES OF THE INPUT WE RECEIVE TO ASSURE AS COMPLETE COVERAGE AS POSSIBLE. PART THREE FOR ALL.
7. YOUR CONTINUING SUPPORT FOR THIS EFFORT IS APPRECIATED.

PRIORITY

PRIORITY

8. HQDESCOM POC IS KEITH MOSTOFI, AV 238-7935.
9. "DESCOM - PROVIDING LEADERS THE DECISIVE EDGE."
AT
#4480

NNNN

PRIORITY

PRIORITY

PT 00190 163/2182Z PAGE 01

AG	A2	I2	IC	A1	I1	OT	A2	I1	FP	A2	I1	FESA	A1	I1	SUPVR A1
SGS	A1	I1	PM	A1	I1	EV	A2	I1	ACC/CE	A4	I4	SEEO	A1	I1	
ACZ	A1	I1	CP	A1	I1	AHN	A2	I1	MO/KAH	A2	I1	CSC	A1	I1	M & R I1
IG	A1	I1	CM	A4	I1	ESO	A2	I1	OS/OEN	A2	I1	CIO	A1	I1	
PAO	A1	I1	EE	A1	I1	LCO	A2	I1	300TH	A2	I1	240TH	A1	I1	OIC I1
PA	A3	I1	IS	A1	I1	PES	A2	I1	ARG	A1	I1	SDO	A1	--	
OI	A2	I1	JA	A1	I1	SES	A2	I1	TSA	A1	I1	ADO	A1	--	RTR-
PTS	A2	I1	CO	A2	I1	TP	A2	I1	ALMC	A3	I1	CGRF	--	I4	
EE	A1	I1	OS	A2	I1	EH	A2	I1	LOGC	A3	I3	COM GUARD		A3	CKR-----

PCTUZYUW RUEPCVC0305 1632100-UUUU--RUEOAGA.
ZNR UUUUU
R 1120157 JUN 85
FM CDR DESCOM CHAMBERSBURG PA //AMSOS-SM-SPO//
TO RUCIAFA/COR AMCCOM RIA ROCK ISL IL //AMSMC-ROF-F/MMP-T/ASIR)//
RUFLWOO/CDR MZAO MAINZ GE //SOSMZ-FMO/P//
RUFONOR/CDR AMC-EUROPE SECKENHEIM GE //AMXEU-FA//
INFO RUKLOAR/COR AMC ALEX VA //AMCSM-POU//
RUEOAGA/DIR AMSAA FT LEE VA //AMXSY-LLSO//

UNCLAS
SUBJ: FORCE MOD STAGING WORKLOAD FOR MZAO, SEP 85-MAR 87
A. MSG, HQDESCOM, AMSOS-SM-SPO, 092015Z JUN 85, SUBJ: WORKLOAD PROJECTIONS FOR THE FRIEDRICHSFELD STAGING AREA (FSA), JUN 85-MAR 87.
B. FONECON BTWN M. WALSH, AMCCOM, AND K. MOSTOFI, HQDESCOM, 11 JUN 85.
C. LTR, HQDESCOM, AMSOS-SM-SPO, 28 MAY 85, SUBJ: REQUESTS FOR USE OF DESCOM OCONUS STAGING/HANDOFF SITES TO SUPPORT NEW EQUIPMENT FIELDINGS.
D. LTR, AMSAA, AMXSY-LLSO, 28 MAY 85, SUBJ: LSO PROJECT OAR, EVALUATION OF ESTABLISHING A PACKAGE PROCESSING POINT (PPP) IN EUROPE. (NOTAL)

JUN 13 7 55 AM '85

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E. MSG, HQDESCOM, AMSOS-SM-SPO, 241200Z APR 85, SUBJ: SECOND QUARTERLY FORCE MODERNIZATION PACKAGING WORKLOAD CONFERENCE, 16-17 APR 85.
F. MSG, HQDESCOM, AMSOS-SM-SPO, 241330Z JAN 85, SUBJ: WORKLOAD PROJECTIONS FOR THE FSA, JAN-DEC 85.
THIS MSG IS IN THREE PARTS.
PART ONE FOR ALL.
1. AS DISCUSSED IN REF B, MZAO IS BEING MADE AVAILABLE ON A LIMITED, INTERIM BASIS FOR THE STAGING/HANDOFF OF SYSTEMS WITH SPECIAL STORAGE AND HANDLING REQUIREMENTS BEING FIELDED IN USAREUR. IN REF D, WE ADVISED THAT WE WOULD PROVIDE A FORCE MOD STAGING WORKLOAD "TIMELINE" FOR MZAO, SIMILAR TO THE REFS A AND E TIMELINES FOR

PRIORITY

PRIORITY

FRIEDRICHSFELD. SHOWN BELOW IS THE MZAD TIMELINE, BASED ON INPUT PROVIDED FOR AND IN THE AFTERMATH OF THE 16-17 APR WORKLOAD CONFERENCE. AS DISCUSSED IN REF F. THIS "TIMELINE" WILL REMAIN TENTATIVE UNTIL AMC-E FORMALLY COORDINATES THE FIELDING SCHEDULES WITH USAREUR.
2. THE FOLLOWING SHOWS THE SYSTEMS SCHEDULED FOR EACH MONTH/ QUARTER IN THE CURRENT WORKLOAD "WINDOW". ALL ARE AMCCOM-MANAGED SYSTEMS. SHOWN FOR EACH SYSTEM ARE THE NUMBER OF PROJECTED FIELDINGS

PAGE 3 RUEPCVC0305 UNCLAS
AND THE TOTAL NUMBER OF END ITEMS/SYSTEMS INVOLVED. DATA ON ASL/PLL PACKAGES/DENSITY ARE ALSO PROVIDED TO ASSIST MZAD IN WORK PLANNING AND AMSAA IN COMPLETING ITS REF D STUDY. NOTE THAT FIRST FIELDINGS ARE SCHEDULED TO BEGIN IN SEP 85: AT THE PRESENT TIME, NO FIELDINGS ARE SCHEDULED FOR THE 4TH QTR, FY86.

FY85 SEP	FY86 OCT	NOV	DEC	JAN
SYSTEM:				
MRA1 CAAA:				
100/1000	100/1000	100/1000	100/1000	100/1000
REMSS(A):				
			4/22	
M3A4(A):				
			4/48	
SAWS:				
	1/472	1/945	1/472	
TOTAL:				
100/1000	101/1472	101/1945	109/1542	100/1000
ASL/PLL PACKAGES/LINES:				
7/936	74/2054	142/3184	75/2066	7/936

FY86 FEB	MAR	3Q	4Q	FY87 1Q	2Q

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MRA1:
100/1000 100/1000 300/3000
M3AR(A):
1/160
CAM:
410/2500
120HMS(C):
1/62 1/63
M-252(D):
1/34

PRIORITY

PRIORITY

GEMSS(A):

2/33

TOTAL:

100/1000	101/1160	300/3000	0	411/2652	4/130

ASL/PLL PACKAGES/LINES:

7/936	7/936	21/2808	--	444/2965	---

NOTES: (A) NO ASL/PLL WILL BE FIELDED WITH SYSTEM
(B) WILL BE FIELDED FOLLOWING APPLICATION OF MWO AT MZAD
(C) 120MM BATTALION MORTAR SYSTEM: SKELETON DATA ONLY
(D) IMPROVED 81MM MORTAR: SKELETON DATA ONLY

PAGE 5 RUEPCVC0305 UNCLAS
3. NOT INCLUDED IN THE FOREGOING IS THE XM17 LIGHTWEIGHT DECON SYSTEM. TENTATIVELY SCHEDULED FOR INITIAL FIELDING IN USAREUR IN SEP 85. BUT LACKING A DA DCSOPS APPROVED DISTRIBUTION. PER REF B. STATUS OF THIS SYSTEM WILL BE UPDATED PRIOR TO NEXT WORKLOADING CONF (16-17 JUL 85).
4. WE WILL UPDATE PARA 2 "TIMELINE" IN MID-AUGUST 85. BASED ON THE RESULTS OF THE 16-17 JUL FORCE MOD WORKLOAD CONF.
PART TWO FOR AMC-EUROPE.
5. PER AGREEMENT, THE MZAD "TIMELINE" IS FORWARDED FOR VALIDATION/ COORDINATION WITH USAREUR.
PART THREE FOR ALL.
6. YOUR CONTINUING SUPPORT FOR THIS EFFORT IS APPRECIATED.
7. HQDESCOM POC IS KIETH MOSTOFI, AV 238-7935.
8. "DESCOM - PROVIDING LEADERS THE DECISIVE EDGE."
BT
#0305

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PRIORITY

PT 00201 1A3/22167 PAGE 01

AG	A2	I2	IC	A1	I1	OT	A2	I1	FP	A2	I1	FFSA	A1	I1	SUPVR	A1
SGS	A1	I1	PM	A1	I1	EV	A2	T1	ACC/CE	A4	I4	SEFO	A1	I1		
ACZ	A1	I1	CP	A1	I1	AHN	A2	I1	MO/KAH	A2	I1	CSC	A1	T1	M & R	T1
IG	A1	I1	CM	A4	I1	ESD	A2	I1	OS/DEN	A2	I1	CIO	A1	T1		
PAO	A1	I1	FE	A1	I1	LCO	A2	I1	300TH	A2	I1	240TH	A1	I1	OIC	T1
PA	A3	I1	IS	A1	I1	PFS	A2	I1	ARG	A1	I1	SDO	A1	--		
OI	A2	I1	JA	A1	I1	SES	A2	I1	TSA	A1	I1	ADO	A1	--	RTR-	
PTS	A2	I1	CO	A2	I1	TP	A2	I1	ALMC	A3	T1	CGRF	--	I4		
FE	A1	I1	OS	A2	I1	FH	A2	I1	LOGC	A3	I3	COM GUARD	A3		CKR-	

FCTUZYUW RUEPCVC0306 1A32143-UUUU--RUEOAGA.
ZNR UUUUU
P 1020157 JUN 85
FM CDR OFSCOM CHAMBERSBURG PA //AMSOS-SM-SPO//
TO RUCIWM8/CDR TACOM WARREN MI //AMSTA-KF/F//
RUCIWM8/PM FOR TVS WARREN MI //AMCPM-TV//
RUFLWDD/CDR M780 MAINZ GE //SOSMZ-FM/PST//
RUEDNDP/CDR AMC-EUROPE SECKENHEIM GE //AMXEU-FA//
INFO RUKLDAR/CDR AMC ALEX VA //AMCSM-PDU//
RUFLWDE/TVFT-E MAINZ GE //AMCPM-TV-F//
RUEOAGA/DIR AMSAA FT LEE VA //AMXSY-LLSO//

JUN 13 7 55 AM '85

UNCLAS
SUBJ: WORKLOAD PROJECTIONS FOR THE TACTICAL VEHICLE STAGING FACILITY (TVSF)
A. MSG, HQDESCOM, AMSOS-SM-SPO, 092015Z JUN 85, SUBJ: WORKLOAD PROJECTIONS FOR THE FRIEDRICHSFELD STAGING AREA (FSA), JUNE 85-MARCH 87.
B. LTR, AMSAA, AMXSY-LLSO, 23 MAY 85, SUBJ: LSO PROJECT 068, EVALUATION OF ESTABLISHING A PACKAGE PROCESSING POINT (PPP) IN EUROPE, (NOTAL)
C. MSG, HQDESCOM, AMSOS-SM-SPO, 261200Z APR 85, SUBJ: SECOND

PAGE 2 RUEPCVC0306 UNCLAS
QUARTERLY FORCE MODERNIZATION PACKAGING WORKLOAD CONFERENCE, 16-17 APR 85.
D. MSG, HQDESCOM, AMSOS-SM-SPO, 241330Z JAN 85, SUBJ: WORKLOAD PROJECTIONS FOR THE FSA, JAN-DEC 85.
THIS MSG IS IN THREE PARTS.
PART ONE FOR ALL.
1. IN REF C WE ADVISED THAT WE WOULD BE ISSUING A "TIMELINE" FOR THE TVSF, MODELLED ON THOSE FOR THE FSA (REFS A AND D), BASED ON TACOM INPUT FOR AND FOLLOWING THE 16-17 APR 85 WORKLOADING CONF. AS NOTED IN REF C, THIS TIMELINE WILL REMAIN TENTATIVE UNTIL AMC-F FORMALLY COORDINATES THE FIELDING SCHEDULES WITH USAREUR.
2. SHOWN BELOW ARE THE NUMBER OF FIELDINGS AND TOTAL END ITEMS,

PRIORITY

BY MONTH AND QUARTER IN THE CURRENT WORKLOAD "WINDOW", FOR THE SYSTEMS THAT TACOM HAS SCHEDULED TO US. ALSO SHOWN ARE TOTAL NUMBER OF ASL/PLL PACKAGES AND TOTAL LINES INVOLVED TO ASSIST MZAD IN WORK PLANNING AND AMSAA IN ACCOMPLISHING ITS TASK SET FORTH IN REF A.

FYRS:	JUN	JUL	AUG	SEP
SYSTEM:				
HEMTT		2/84	5/92	7/115
M939:	9/120	9/121	9/121	9/120
* 77/1668 ASL/PLL		53/1904	52/1723	84/1745

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CHCV(A):	57/684	57/684	57/684	57/684
TOTAL FIELDINGS/END ITEMS:	66/808	68/849	71/897	73/919
SPECIAL TOOL SETS (HEMTT)(R):		9	9	22

FYRA:	OCT	NOV	DEC	JAN
HEMTT:	8/144	8/140	5/113	6/98
M939:	4/54	4/54	3/53	4/54
CHCV:	57/684	57/684		
HEMMWV:	2/96	7/124	3/120	2/226
M878A1:		1/25		
TOTAL FIELDINGS/END ITEMS:	71/998	77/1027	11/286	12/378
ASL/PLL PKGS/TOT LINES:	90/2251	100/2331	19/469	35/1210
SPECIAL TOOL SETS (HEMTT):	29	27	0	18

FYRA:	FEB	MAR	30	40
HEMTT:	12/53	18/282	74/375	45/152
M939:	4/54	3/53	11/160	11/160

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HMMWV:	1/163	4/438	4/498	4/1218
TOTAL FIELDINGS/END ITEMS:	17/270	25/773	91/2029	60/1530
ASL/PLL PKGS/TOTAL LINES:	29/517	53/1123	54/2982	109/2237
SPECIAL TOOL SETS (HEMTT):	27	81	77	28

FYRA:	10	20
HEMTT:	60/74	3/42
M939:	15/226	15/226

PRIORITY

HMMWV:	7/1616	8/1276
TOTAL FIELDINGS/END ITEMS:	82/1916	22/1548
ASL/PLL PKGS/TOTAL LINES:	163/3538	97/1968
SPECIAL TOOL SETS (HEMTT):	86	0

NOTE: (A) WORKLOAD NOT UPDATED FOR 16-17 APR CONFERENCE: ORIGINAL DEC 84 PROJECTIONS USED PER ADVICE OF TACOM WORKLOADING REPRESENTATIVE

PAGE 5 RUEPCVC0306 UNCLAS
(B) ORG. DS AND GS LEVEL
3. WE WILL UPDATE THE "TIMELINE" SHOWN ABOVE IN MID-AUGUST 85, BASED ON RESULTS OF THE UPCOMING (16-17 JUL 85) WORKLOAD CONFERENCE.
PART TWO FOR AMC-EUROPE.
4. PER AGREEMENT, TVSE TIMELINE IS FORWARDED FOR VALIDATION/ COORDINATION WITH USAREUR.
PART THREE FOR ALL.
5. YOUR SUPPORT FOR THIS EFFORT IS APPRECIATED.
6. HQDESCOM POC IS KEITH MOSTOFI, AV 238-7935.
7. "DESCOM - PROVIDING LEADERS THE DECISIVE EDGE".
BT
#0306

NNNN

AMXSY-LLSO 15 July 1985

SUBJECT: Data Call for LSO Project 068 (Unit Materiel Fielding Point (UMFP) - Europe)

Commander
Logistic Control Activity
ATTN: AMXLC-LM
Presidio of San Francisco, CA 94129

1. Reference:

a. Letter, AMXSY-LLSO, this HQ, 14 May 85, subject as above.

b. Letter, AMXLC-S, your HQ, 13 Jun 85, subject: NCAD UMFP Analysis (Report Number 514101).

2. Reference 1a requested supply data on shipments originating from the Unit Materiel Fielding Point (UMFP) at New Cumberland Army Depot (NCAD). Reference 1b provided the desired data.

3. Data requested and received provided descriptive information on the number and nature of supply transactions processed by the UMFP at NCAD. To complete our analysis, this office requires transportation information on shipments processed by NCAD.

4. Request that LCA provide the transportation information depicted in enclosure. Information is needed by 2 August 1985. LSO points of contact are Dave Dryden, AUTOVON 687-3264/2302, and Richard Abeyta, AUTOVON 687-3568.

5. If requested data cannot be provided by 2 August 1985, request that figures identified in enclosure be submitted on an incremental basis within the following priority sequence:

a. Priority 1: Figure 1 titled NCAD UMFP Storage Requirements.

b. Priority 2: Figure 2 titled Class IX Europe Shipments by Mode of Transportation.

DRYden/Abeyta

AMXSY-LLSO 15 July 1985
SUBJECT: Data Call for LSO Project 068 (Unit Materiel Fielding Point (UMFP) - Europe

c. Priority 3: Figures 3 and 4.

FOR THE DIRECTOR:

Enclosure

ROBERT J. BELL
LTC, ADA
Acting Manager
Logistics Studies Office

DATA CALL

LSO PROJECT 068

General Description: Summary printout of New Cumberland Army Depot (NCAD) UMFP Storage Requirements (Figure 1).

Time Frame: Data required for requisitions received in FY 84 and first six months of FY 85.

Limits: Data will be limited to Class IX requisitions received at the NCAD UMFP and destined for Europe. Data will also be limited to items with valid weights and cubes; that is, a weight or cube other than 0 or another absurd number.

Data Elements:

1. Fielding Command - AMC subordinate command responsible for the fielding of equipment supported by the requisition.

2. Special Handling - Requisitions with an AMDF Special Control Item Code (SCIC) of other than 1, 2, 4, and 0. Note: Binable, rackable, and special handling categories are mutually exclusive. Therefore, if an item requires special handling, it cannot be a candidate for normal bin or rack storage.

3. Binable - All requisitions without a Special Control Item Code (SCIC) of 1, 2, 4, and 0 and with an extended weight less than or equal to 70 lbs and an extended cube less than or equal to one cubic foot.

4. Rackable - All requisitions without a Special Control Item Code (SCIC) of 1, 2, 4, and 0 and with an extended weight over 70 lbs or an extended cube greater than one cubic foot.

5. Number of requisitions - Count of requisitions falling within each category.

6. Average cube - Total cube of all requisitions within each category divided by number of requisitions within the category.

7. Average weight - Total weight of all requisitions within each category divided by number of requisitions within the category.

8. Requisitions ignored - Number of actual requisitions unable to be categorize due to inadequate or invalid or absurd weight/cube data.

NCAD UMFP STORAGE REQUIREMENTS

FIELDING COMMAND	CLASS IX REQUISITIONS PROCESSED												NO. OF REQs IGNORED DUE TO INVALID WGT OR CUBE
	SPECIAL HANDLING			BINABLE			RACKABLE			TOTAL ALL CATEGORIES			
	NUM OF REQs	AVG WGT PER REQ	AVG CUBE PER REQ	NUM OF REQS	AVG WGT PER REQ	AVG CUBE PER REQ	NUM OF REQs	AVG WGT PER REQ	AVG CUBE PER REQ	NUM OF REQs	AVG WGT PER REQ	AVG CUBE PER REQ	
	1	2	3	4	5	6	7	8	9	10	11	12	13
MICOM													
FY 84													
FY 85*													
CECOM													
FY 84													
FY 85*													
.													
.													
.													

*1st and 2nd quarters only

1, 4, 7, 10 - include only REQs with valid weight/cube data

Figure 1

DATA CALL

LSO PROJECT 068

General Description: Summary printout of New Cumberland Army Depot shipments destined for Europe by transportation mode (see Figure 2).

Time Frame: Records available for shipments made in FY 84 and first six months of FY 85.

Limits: Data should be limited to requisitions for Class IX items shipped from NCAD to Europe during the time frame cited above.

Data Elements:

1. UMFP Shipments - Requisitions with project codes beginning with the letter "I" and project codes BAP, BGE, BGF, BJG, BNY, BRF, BRK, BRL, BPS, and JVA destined for Europe.

2. Non-UMFP Shipments - All requisitions lacking project codes and those requisitions with project codes different from the project codes cited above.

3. Water Transport - Class IX shipments to Europe by water carrier.

4. Air Transport - Class IX shipments to Europe by air transport.

5. Total Weight - Weight of all requisitions shipped to Europe by mode of transport.

CLASS IX EUROPE SHIPMENTS FROM NCAD BY MODE OF TRANSPORTATION

TYPE OF SHIPMENT	FISCAL YEAR	WATER TRANSPORT		AIR TRANSPORT	
		NUMBER REQUISITIONS	TOTAL WEIGHT	NUMBER REQUISITIONS	TOTAL WEIGHT
NCAD UMFP	FY 84 FY 85*				
NCAD NON-UMFP	FY 84 FY 85*				
TOTAL NCAD SHIPMENTS	FY 84 FY 85*				

*1st and 2nd quarters only

Figure 2

DATA CALL

LSO PROJECT 068

General Description: Histogram type data of NCAD UMFP requisitions weight and cube (see Figures 3 and 4).

Time Frame: Data required for requisitions received in FY 84 and first six months of FY 85.

Limits: Data should be limited to Class IX requisitions received at the NCAD UMFP and destined for Europe. Data should also be limited to items with valid weights and cubes; that is, a weight or cube other than 0 or some absurd number.

Data Elements:

1. Fielding Command - AMC subordinate command responsible for the fielding of equipment supported by the requisition.

2. Total Requisitions - Count of all Class IX requisitions received at the NCAD UMFP and destined for Europe.

3. Requisitions with valid weight or cube - Subset of total requisitions consisting of count of requisitions with weight or cube other than 0 or some absurd number.

4. Ten Even Intervals - Distribution of requisitions with valid weights and cube. Distribution is formed by screening valid requisitions for each fielding command. Identify maximum and minimum extended weight/cube of requisition for each command. Subtract minimum values from maximum values to derive range. Divide range quantity by 10 to determine interval width. Add interval width to minimum limits sequentially to establish 10 intervals between minimum and maximum extended weight. Provide count of requisition falling within each of the ten intervals.

PROFILE OF NCAD UMFP REQUISITION WEIGHT

	FIELDING COMMAND	SAMPLE SIZE TOTAL REQs	SAMPLE SIZE REQs W/VALID WEIGHT	TEN EVEN INTERVALS OF EXTENDED WEIGHT (IN LBS) 1	2	3	4	5	6	7	8	9	10
*	MICOM			XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX
				W_{min}-W_1	W_1-W_2	W_2-W_3	W_3-W_4	W_4-W_5	W_5-W_6	W_6-W_7	W_7-W_8	W_8-W_9	W_9-W_{max}
**	CECOM	41	25	1 1-3	5 3-5	3 5-7	0 7-9	0 9-11	0 11-13	2 13-15	4 15-17	0 17-19	10 19-21
	. . .												

* - notation to assist programmer

** - example of what table could look like for minimum weight of 1 lb and maximum weight of 21 lbs.

Note: XXX = number of requisitions falling within established weight limits
W min = minimum requisition weight (extended) for that fielding command
W max = maximum requisition weight (extended) for that fielding command
$W\,\underline{i} = i\,\left(\frac{W\,max - W\,min}{10}\right)$
count for all $\underline{i}$ = $(W\underline{i}-1 < W \leq W\underline{i})$

Figure 3

PROFILE OF NCAD UMFP REQUISITION CUBE

FIELDING COMMAND	SAMPLE SIZE		TEN EVEN INTERVALS OF EXTENDED CUBE (IN CU FT)									
	TOTAL RLQs	REQs W/VALID CUBE	1	2	3	4	5	6	7	8	9	10
MICOM			XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX
			C_{min}-C_1	C_1-C_2	C_2-C_3	C_3-C_4	C_4-C_5	C_5-C_6	C_6-C_7	C_7-C_8	C_8-C_9	C_9-C_{max}
CECOM												

Note: XXX = number of requisitions falling within all limits
$C\ \underline{min}$ = minimum requisition cube (extended) for that fielding command
$C\ \underline{max}$ = maximum requisition cube (extended) for that fielding command
$C\ \underline{i} = i \left(\frac{C\ max - C\ min}{10}\right)$
count for all $\underline{i}$ = $(C\underline{i}-1 < C \leq C\underline{i})$

Figure 4

A = AIR AIR S = SEA	QUARTER	EXPEDITE REQUISITIONS	TOTAL WEIGHT
A	2ND	629,958	18,509,370.89
A	3RD	80,157	3,126,306.69
A		709,905	21,634,677.58
S	2ND	71,924	19,590,210.51
S	3RD	8,010	2,306,175.41
S		79,934	21,896,391.92
		789,839	43,531,069.50

AIR

726,005 / 809,939 = 90%

SAP

79,934 / 809,939 = 10%

			[illegible]
			[illegible]
			[illegible]
			[illegible]
			[illegible]
			[illegible]

AIR

$\frac{4209}{6655} = 63\%$

Ship

$\frac{2446}{6655} = 37\%$

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APPENDIX B

ITEM WEIGHT/CUBE/PRICE ANALYSIS

Item Characteristics Statistics. The enclosed listings contain weight, cube, and price data used in the analysis. These listings represent computer printouts resulting from statistical analyses of magnetic tapes provided by LCA. A separate listing is provided for each characteristic (i.e.; weight, cube) by storage category (i.e.; bin, rack, cube) by fielding command. Summary sheets are also provided at the front of the appendix.

WEIGHT STATISTICS

STORAGE CATEGORY	STATISTIC	AMCCOM	AVSCOM	CECOM	MICOM	TACOM	TROSCOM
	Sample Size (N)	9168	5382	5922	1603	18194	2938
	Min Value (MIN)	0.01	0.01	0.01	0.01	0.01	0.01
	1st Quartile (Q1)	0.18	0.57	0.37	0.63	1.42	0.63
	Median (Q2)	0.85	1.74	1.15	1.40	5.32	1.96
B	3d Quartile (Q3)	3.78	4.40	4.50	3.11	15.15	6.00
I	Max Value (MAX)	70.00	70.00	70.00	70.00	70.00	67.90
N	Mode (M)	0.02	1.00	1.00	1.50	21.00	1.00
	Mean ($\bar{x}$)	4.13	4.00	5.31	3.36	11.11	5.23
	St Dev (SD)[1]	0.09	0.09	0.13	0.16	0.10	0.15
	Skewness (S)[2]	3.59	4.20	3.32	5.39	1.87	3.15
	Kurtosis (K)[3]	15.37	24.50	12.56	41.66	3.35	12.85
	Sample Size (N)	883	771	653	240	7291	386
	Min Value (MIN)	0.94	0.25	3.00	0.40	0.12	2.00
	1st Quartile (Q1)	36.36	17.50	51.20	31.26	58.00	40.95
	Median (Q2)	74.50	41.10	100.00	57.50	106.38	80.00
R	3d Quartile (Q3)	130.00	85.00	216.00	105.06	216.60	150.48
A	Max Value (MAX)	1323.00	1449.00	2414.72	1800.00	2496.00	1880.00
C	Mode (M)	82.00	None	50.00	57.50	42.00	60.00
K	Mean ($\bar{x}$)	113.03	74.74	209.89	89.26	198.73	123.51
	St Dev (SD)[1]	4.67	4.12	11.92	8.81	3.24	8.14
	Skewness (S)[2]	3.81	5.40	3.31	8.62	3.88	5.75
	Kurtosis (K)[3]	20.33	45.86	13.25	100.80	19.58	49.27
	Sample Size (N)	52	127	14	36	1183	42
	Min Value (MIN)	36.42	32.00	507.50	0.03	38.94	260.00
	1st Quartile (Q1)	313.86	518.00	800.00	56.25	869.24	340.00
	Median (Q2)	634.52	640.00	2450.50	384.00	2336.00	593.50
B	3d Quartile (Q3)	1392.94	1163.00	4259.50	414.00	4265.00	1518.00
U	Max Value (MAX)	19680.00	2612.00	26250.00	4680.00	53152.00	3910.00
L	Mode (M)	None	604.00	800.00	384.00	3086.00	None
K	Mean ($\bar{x}$)	1429.06	832.25	4028.25	478.99	4217.90	1119.93
	St Dev (SD)[1]	396.11	48.72	1771.10	132.47	185.35	161.39
	Skewness (S)[2]	5.11	1.11	2.64	4.14	3.68	1.31
	Kurtosis (K)[3]	29.26	1.03	6.06	18.84	16.56	0.51

[1] $SD = [\Sigma (x_i - \bar{x})^2 / (N - 1)]^{1/2}$

[2] $S = \Sigma (x_i - \bar{x})^3 / (N)(SD)^3$

[3] $K = \Sigma (x_i - \bar{x})^4 / [(N)(SD)^4] - 3$

CUBE STATISTICS

STORAGE CATEGORY	STATISTIC	AMCCOM	AVSCOM	CECOM	MICOM	TACOM	TROSCOM
	Sample Size (N)	9168	5385	5922	1603	18192	2938
	Min Value (MIN)	0.001	0.001	0.001	0.001	0.001	0.001
	1st Quartile (Q1)	0.009	0.040	0.018	0.042	0.048	0.040
	Median (Q2)	0.040	0.120	0.050	0.120	0.190	0.120
B	3d Quartile (Q3)	0.180	0.360	0.180	0.260	0.570	0.320
I	Max Value (MAX)	2.000	2.000	2.000	2.000	2.000	2.000
N	Mode (M)	0.001	0.040	0.006	0.182	0.020	0.040
	Mean ($\bar{x}$)	0.190	0.290	0.190	0.240	0.400	0.270
	St Dev (SD)[1]	0.003	0.005	0.004	0.008	0.003	0.007
	Skewness (S)[2]	2.820	2.060	2.960	2.540	2.010	2.310
	Kurtosis (K)[3]	8.270	3.930	9.320	6.810	13.300	5.590
	Sample Size (N)	883	772	653	240	7291	386
	Min Value (MIN)	0.03	0.02	0.15	2.00	0.002	0.22
	1st Quartile (Q1)	2.60	2.95	2.06	3.27	2.740	3.14
	Median (Q2)	4.46	4.70	3.59	4.49	5.050	6.00
R	3d Quartile (Q3)	8.86	9.04	6.24	9.68	10.940	12.62
A	Max Value (MAX)	39.98	40.00	37.17	39.98	40.000	38.78
C	Mode (M)	None	6.00	3.59	3.88	2.600	3.00
K	Mean ($\bar{x}$)	7.20	7.37	5.58	7.37	8.340	9.24
	St Dev (SD)[1]	0.24	0.24	0.24	0.44	0.090	0.43
	Skewness (S)[2]	2.09	2.05	2.54	2.31	1.730	1.57
	Kurtosis (K)[3]	4.52	4.55	7.40	6.01	2.510	1.84
	Sample Size (N)	52	127	14	36	1183	42
	Min Value (MIN)	0.34	40.29	38.70	40.10	1.52	42.00
	1st Quartile (Q1)	46.51	64.32	57.50	45.39	55.40	52.00
	Median (Q2)	71.63	78.36	70.23	53.44	95.20	68.85
B	3d Quartile (Q3)	104.66	114.00	86.68	55.65	181.57	102.00
U	Max Value (MAX)	915.99	503.00	465.00	915.90	2131	507.42
L	Mode (M)	None	78.36	None	55.65	95.20	None
K	Mean ($\bar{x}$)	115.76	115.83	102.37	84.34	156.80	112.39
	St Dev (SD)[1]	20.49	8.96	29.35	24.31	5.19	17.84
	Skewness (S)[2]	3.59	2.49	2.55	5.15	3.78	2.37
	Kurtosis (K)[3]	14.82	5.98	5.54	26.34	23.61	4.50

[1] $SD = [\Sigma (x_i - \bar{x})^2 / (N - 1)]^{1/2}$

[2] $S = \Sigma (x_i - \bar{x})^3 / (N)(SD)^3$

[3] $K = \Sigma (x_i - \bar{x})^4 / [(N)(SD)^4] - 3$

PRICE STATISTICS

STORAGE CATEGORY	STATISTIC	AMCCOM	AVSCOM	CECOM	MICOM	TACOM	TROSCOM
	Sample Size (N)	9551	5679	6029	1609	18872	3050
	Min Value (MIN)	0.01	0.07	0.05	0.05	0.02	0.05
	1st Quartile (Q1)	6.11	36.00	48.06	110.88	11.33	15.70
	Median (Q2)	34.08	124.00	168.32	356.00	37.63	55.22
B	3d Quartile (Q3)	140.40	507.00	533.00	1314.00	109.00	168.42
I	Max Value (MAX)	223136.00	352000.00	308200.00	45350.00	310222.00	83615.00
N	Mode (M)	35.28	99.96	3060.00	2308.00	55.37	2.78
	Mean ($\bar{x}$)	308.04	1456.11	775.51	1404.10	168.07	313.61
	St Dev (SD)[1]	40.62	198.60	61.24	79.26	18.25	33.73
	Skewness (S)[2]	35.40	21.47	48.09	5.90	104.10	31.29
	Kurtosis (K)[3]	1580.11	486.06	2959.83	49.68	12498.00	1323.44
	Sample Size (N)	883	773	653	240	7291	386
	Min Value (MIN)	0.39	2.73	15.12	10.81	2.08	25.00
	1st Quartile (Q1)	288.00	446.00	277.20	2351.00	145.60	201.00
	Median (Q2)	700.00	1785.00	570.00	8201.50	292.80	464.18
R	3d Quartile (Q3)	1907.04	5068.00	1991.00	25741.00	705.00	993.60
A	Max Value (MAX)	398121.00	111100.00	332973.00	170592.00	51132.00	147908.00
C	Mode (M)	13129.00	32421.00	362.00	68591.00	126.00	201.00
K	Mean ($\bar{x}$)	3283.65	5316.00	2883.72	22265.00	21.33	1929.87
	St Dev (SD)[1]	522.91	381.69	571.06	2039.56	761.53	455.17
	Skewness (S)[2]	19.79	4.60	18.43	2.15	10.64	12.46
	Kurtosis (K)[3]	477.34	28.94	400.99	4.80	173.02	186.71
	Sample Size (N)	52	127	14	36	1183	42
	Min Value (MIN)	232.00	446.00	1125.00	7.10	43.62	1193.92
	1st Quartile (Q1)	3923.68	10820.00	2585.00	175.27	1430.00	2669.00
	Median (Q2)	7880.24	28044.00	9695.24	176745.00	4464.00	4623.00
B	3d Quartile (Q3)	18475.14	63438.00	17257.00	--	12144.00	10279.00
U	Max Value (MAX)	110720.00	874200.00	106350.00	413496.00	707610.00	103155.00
L	Mode (M)	None	11620.00	None	206748.00	11626.00	None
K	Mean ($\bar{x}$)	17548.87	75804.00	15996.69	124161.00	20145.00	9824.90
	St Dev (SD)[1]	3579.20	12891.00	7128.87	19370.00	1591.00	2516.00
	Skewness (S)[2]	2.27	3.73	2.73	0.26	6.43	4.51
	Kurtosis (K)[3]	4.46	14.94	6.43	-1.15	56.44	22.65

[1] $SD = [\Sigma (x_i - \bar{x})^2 / (N - 1)]^{1/2}$

[2] $S = \Sigma (x_i - \bar{x})^3 / (N)(SD)^3$

[3] $K = \Sigma (x_i - \bar{x})^4 / [(N)(SD)^4] - 3$

AMCCOM WEIGHT

BIN LINES

PAGE 3 BROP20 PRICE & WEIGHT & CUBE

```
************
* EWGT     *
************
```

VARIABLE NUMBER	2		MAXIMUM	70.000000
NUMBER OF DISTINCT VALUES .	1204		MINIMUM	0.010000
NUMBER OF VALUES COUNTED. .	9168		RANGE	65.9900000
NUMBER OF VALUES NOT COUNTED	350		VARIANCE	69.5532723
			ST.DEV.	8.3350405
			(Q3-Q1)/2	1.8000000
			MX.ST.SC.	7.90
			MN.ST.SC.	-0.49

	ESTIMATE	ST.ERROR	95% CONFIDENCE LOWER	95% CONFIDENCE UPPER
MEAN	4.1295310	0.0871087	3.9527943	4.3002677
MEDIAN	0.0500000	0.0200675		
MODE	0.0200000			

```
M
M
M
M
M
M
M
P
PM
PMMMPPPMMMPPMMMPPPMMMPPMMMPPMMMPPPPMMPPM
L----------------------------------------U
```

EACH "M" REPRESENTS 602 COUNT(S)

EACH "-" ABOVE = 2.0000
L= 0.0000
U= 70.0000
CASE NO. OF MIN. VAL. = 73
CASE NO. OF MAX. VAL. = 8820

	VALUE	VALUE/S.E.		
			Q1=	0.1000000
			Q3=	3.7000000
SKEWNESS	3.59	148.16	S-=	-4.2103295
KURTOSIS	15.37	300.35	S+=	12.4693514

EACH "." BELOW = 0.7500

```
S     Q   Q          S                                                          M
-     MM  M          +                                                          A
------IE--E-------------------------------------------------------------------A
      MD  A                                                                     X
      I   N
```

VALUE	COUNT	PERCENTS CELL	PERCENTS CUM	VALUE	COUNT	PERCENTS CELL	PERCENTS CUM	VALUE	COUNT	PERCENTS CELL	PERCENTS CUM	VALUE	COUNT	PERCENTS CELL	PERCENTS CUM
0.010000	241	2.6	2.6	3.420000	4	0.0	73.8	9.090000	1	0.0	86.8	19.040000	1	0.0	94.4
0.020000	330	3.6	6.2	3.430000	1	0.0	73.8	9.100000	5	0.1	86.8	19.080000	1	0.0	94.4
0.030000	157	1.7	7.9	3.440000	2	0.0	73.9	9.120000	6	0.1	86.9	19.200000	1	0.0	94.4
0.040000	199	2.2	10.1	3.450000	5	0.1	73.9	9.130000	1	0.0	86.9	19.320000	2	0.0	94.5
0.050000	117	1.3	11.4	3.460000	2	0.0	73.9	9.150000	2	0.0	86.9	19.360000	1	0.0	94.5
0.060000	195	2.1	13.5	3.470000	2	0.0	74.0	9.160000	1	0.0	86.9	19.400000	3	0.0	94.5
0.070000	82	0.9	14.4	3.480000	11	0.1	74.1	9.180000	3	0.0	87.0	19.450000	1	0.0	94.5
0.080000	169	1.8	16.3	3.500000	13	0.1	74.2	9.200000	4	0.0	87.0	19.500000	2	0.0	94.5
0.090000	65	0.7	17.0	3.510000	2	0.0	74.2	9.210000	1	0.0	87.0	19.550000	4	0.0	94.6
0.100000	132	1.4	18.4	3.520000	2	0.0	74.3	9.240000	2	0.0	87.0	19.560000	1	0.0	94.6
0.110000	92	1.0	19.4	3.540000	2	0.0	74.3	9.250000	1	0.0	87.1	19.590000	1	0.0	94.6
0.120000	168	1.8	21.2	3.550000	3	0.0	74.3	9.270000	1	0.0	87.1	19.600000	2	0.0	94.6
0.130000	47	0.5	21.7	3.570000	2	0.0	74.3	9.280000	2	0.0	87.1	19.640000	1	0.0	94.6
0.140000	63	0.7	22.4	3.600000	16	0.2	74.5	9.300000	3	0.0	87.1	19.700000	1	0.0	94.7
0.150000	79	0.9	23.3	3.610000	2	0.0	74.5	9.320000	1	0.0	87.1	19.720000	3	0.0	94.7
0.160000	66	0.7	24.0	3.630000	2	0.0	74.6	9.350000	1	0.0	87.1	19.800000	1	0.0	94.7
0.170000	25	0.3	24.3	3.640000	3	0.0	74.6	9.360000	2	0.0	87.2	19.880000	1	0.0	94.7
0.180000	78	0.9	25.1	3.660000	5	0.1	74.6	9.380000	1	0.0	87.2	19.900000	1	0.0	94.7
0.190000	27	0.3	25.4	3.670000	1	0.0	74.7	9.390000	2	0.0	87.2	20.000000	8	0.1	94.8

AMCCOM CUBE

BIN LINES

```
************
* ECUB     *
************
```

VARIABLE NUMBER	3	MAXIMUM	2.0000000
NUMBER OF DISTINCT VALUES .	930	MINIMUM	0.0010000
NUMBER OF VALUES COUNTED. .	9160	RANGE	1.9990000
NUMBER OF VALUES NOT COUNTED	350	VARIANCE	0.1180024
		ST.DEV.	0.3435140
		(Q3-Q1)/2	0.0847500
		MX-ST.SC.	5.28
		MN-ST.SC.	-0.54

	ESTIMATE	ST.ERROR	95% CONFIDENCE LOWER	95% CONFIDENCE UPPER
MEAN	0.1869802	0.0035876	0.1799557	0.1940048
MEDIAN	0.0420000	0.0014434		
MODE	0.0010000			

```
H
H
H
H
H
H
H
H
HHH
HHHHHHHHHHHHHHHHHHHHHHHHHHHHHHH
L------------------------------------------------U
```

EACH "H" REPRESENTS 559 COUNT(S)

EACH "-" ABOVE = 0.0750
L= 0.0000
U= 2.9250

CASE NO. OF MIN. VAL. = 18
CASE NO. OF MAX. VAL. = 115

	VALUE	VALUE/S.E.		
			Q1=	0.0090000
			Q3=	0.1785000
SKEWNESS	2.02	110.37	S-=	-0.1565266
KURTOSIS	6.27	161.57	S+=	0.5305030

EACH "." BELOW = 0.0200

```
S     Q             Q          S
-     M1  M         3N         +
.......I..E.........E...........................................M
      N   O         A                                           A
          I         N                                           X
```

VALUE	COUNT	PERCENTS CELL	PERCENTS CUM	VALUE	COUNT	PERCENTS CELL	PERCENTS CUM	VALUE	COUNT	PERCENTS CELL	PERCENTS CUM	VALUE	COUNT	PERCENTS CELL	PERCENTS CUM
0.0010000	440	4.8	4.8	0.2370000	4	0.0	79.2	0.5360000	1	0.0	85.0	1.0380000	2	0.0	95.5
0.0020000	401	4.4	9.2	0.2380000	5	0.1	79.3	0.5380000	1	0.0	85.0	1.0400000	3	0.0	95.5
0.0030000	303	3.3	12.5	0.2390000	1	0.0	79.3	0.5390000	3	0.0	85.0	1.0440000	2	0.0	95.5
0.0040000	316	3.4	15.9	0.2400000	30	0.3	79.6	0.5400000	8	0.1	85.1	1.0470000	1	0.0	95.6
0.0050000	195	2.1	18.1	0.2410000	1	0.0	79.6	0.5410000	1	0.0	85.1	1.0480000	3	0.0	95.6
0.0060000	246	2.7	20.7	0.2420000	18	0.1	79.8	0.5420000	1	0.0	85.1	1.0500000	3	0.0	95.6
0.0070000	102	1.1	21.8	0.2440000	3	0.0	79.8	0.5440000	8	0.1	85.2	1.0520000	1	0.0	95.6
0.0080000	180	2.0	23.8	0.2450000	2	0.0	79.8	0.5450000	3	0.0	85.3	1.0530000	1	0.0	95.6
0.0090000	132	1.4	25.3	0.2460000	7	0.1	79.5	0.5460000	3	0.0	85.3	1.0560000	3	0.0	95.7
0.0100000	211	2.3	27.6	0.2470000	4	0.0	79.9	0.5490000	2	0.0	85.3	1.0680000	1	0.0	95.7
0.0110000	59	0.6	28.2	0.2480000	3	0.0	80.0	0.5500000	5	0.1	85.4	1.0800000	9	0.1	95.8
0.0120000	193	2.1	30.3	0.2490000	1	0.0	80.0	0.5520000	7	0.1	85.5	1.0910000	1	0.0	95.8
0.0130000	48	0.5	30.8	0.2500000	22	0.2	80.2	0.5540000	1	0.0	85.5	1.0950000	2	0.0	95.8
0.0140000	89	1.0	31.8	0.2510000	2	0.0	80.2	0.5550000	1	0.0	85.5	1.0960000	1	0.0	95.8
0.0150000	100	1.1	32.9	0.2520000	12	0.1	80.4	0.5580000	6	0.1	85.5	1.0980000	1	0.0	95.8
0.0160000	105	1.1	34.0	0.2530000	2	0.0	80.4	0.5590000	3	0.0	85.6	1.1000000	2	0.0	95.9
0.0170000	18	0.2	34.2	0.2540000	2	0.0	80.4	0.5600000	12	0.1	85.7	1.1040000	2	0.0	95.9
0.0180000	125	1.4	35.6	0.2550000	2	0.0	80.4	0.5610000	4	0.0	85.7	1.1080000	1	0.0	95.9
0.0190000	31	0.3	36.0	0.2560000	10	0.1	80.5	0.5620000	3	0.0	85.8	1.1120000	1	0.0	95.9

EPSC

VARIABLE NUMBER 1
NUMBER OF DISTINCT VALUES . 4666
NUMBER OF VALUES COUNTED. . 9551
NUMBER OF VALUES NOT COUNTED 7

MAXIMUM 223136.0000000
MINIMUM 8.0160000
RANGE 223135.9839990
VARIANCE 15755548.7003174
ST.DEV. 3969.3753529
(Q3-Q1)/2 67.1450000
PK.ST.SC. 56.12
PN.ST.SC. -0.18

	ESTIMATE	ST.ERROR	95% CONFIDENCE LOWER	95% CONFIDENCE UPPER
MEAN	388.0415192	40.6160557	308.4254228	467.6576156
WINSOR MEAN	34.0000000	0.0025172		
MODE	35.2000000			

EACH "M" REPRESENTS 950 COUNT(S)

EACH "-" ABOVE = 7500.0000
L= 0.0000
U= 292500.0000
CASE NO. OF MIN. VAL. = 2325
CASE NO. OF MAX. VAL. = 9541

Q1= 6.1100000
Q3= 140.4000000
S--=3561.3338347
S+= 4357.4160732

	VALUE	VALUE/S.E.
SKEWNESS	35.40	1412.46
KURTOSIS	1500.11	31521.46

EACH "." BELOW = 2000.0000

VALUE	COUNT	PERCENTS CELL	PERCENTS CUM	VALUE	COUNT	PERCENTS CELL	PERCENTS CUM	VALUE	COUNT	PERCENTS CELL	PERCENTS CUM	VALUE	COUNT	PERCENTS CELL	PERCENTS CUM
.10000E-01	14	0.1	0.1	21.010	1	0.0	42.1	71.750	1	0.0	63.7	242.00	1	0.0	82.7
.20000E-01	28	0.3	0.4	21.040	1	0.0	42.1	71.760	2	0.0	63.7	243.00	1	0.0	82.8
.30000E-01	10	0.1	0.5	21.060	5	0.1	42.2	71.820	2	0.0	63.7	243.39	2	0.0	82.8
.40000E-01	41	0.4	1.0	21.100	4	0.0	42.2	72.000	1	0.0	63.7	243.50	1	0.0	82.8
.50000E-01	19	0.2	1.2	21.120	2	0.0	42.3	72.240	1	0.0	63.7	244.00	1	0.0	82.8
.60000E-01	24	0.3	1.4	21.150	1	0.0	42.3	72.310	1	0.0	63.8	244.40	1	0.0	82.8
.70000E-01	16	0.2	1.6	21.160	1	0.0	42.3	72.320	1	0.0	63.8	245.00	2	0.0	82.8
.80000E-01	20	0.2	1.8	21.170	1	0.0	42.3	72.330	2	0.0	63.8	245.10	1	0.0	82.8
.90000E-01	11	0.1	1.9	21.200	3	0.0	42.3	72.700	1	0.0	63.8	245.82	2	0.0	82.9
0.10000	20	0.3	2.2	21.240	2	0.0	42.3	72.840	2	0.0	63.8	245.84	2	0.0	82.9
0.11000	12	0.1	2.3	21.280	1	0.0	42.4	72.900	2	0.0	63.8	246.00	2	0.0	82.9
0.12000	31	0.3	2.7	21.290	1	0.0	42.4	72.950	1	0.0	63.8	246.33	1	0.0	82.9
0.13000	2	0.0	2.7	21.300	1	0.0	42.4	73.040	1	0.0	63.9	246.60	2	0.0	82.9
0.14000	30	0.3	3.0	21.320	1	0.0	42.4	73.100	1	0.0	63.9	246.68	1	0.0	82.9
0.15000	15	0.2	3.2	21.340	1	0.0	42.4	73.180	2	0.0	63.9	246.72	1	0.0	83.0
0.16000	14	0.1	3.3	21.350	2	0.0	42.4	73.280	1	0.0	63.9	246.76	1	0.0	83.0
0.17000	7	0.1	3.4	21.360	4	0.0	42.5	73.290	1	0.0	63.9	247.00	1	0.0	83.0
0.18000	19	0.2	3.6	21.370	1	0.0	42.5	73.370	1	0.0	63.9	247.83	1	0.0	83.0
0.19000	5	0.1	3.6	21.400	3	0.0	42.5	73.380	1	0.0	63.9	248.00	1	0.0	83.0

****
* ENGT *
****

VARIABLE NUMBER	2
NUMBER OF DISTINCT VALUES .	626
NUMBER OF VALUES COUNTED. .	803
NUMBER OF VALUES NOT COUNTED	0

MAXIMUM	1323.0000000
MINIMUM	0.9400000
RANGE	1322.0600000
VARIANCE	19269.5015076
ST.DEV.	138.8069179
(Q3-Q1)/2	46.8200000
MX.ST.SC.	8.71
MN.ST.SC.	-0.81

	ESTIMATE	ST.ERROR	95% CONFIDENCE LOWER	95% CONFIDENCE UPPER
MEAN	113.0306795	4.6739176	103.8575811	122.2039779
MEDIAN	74.5000000	2.9589215		
MODE	62.0000000			

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H
HH
HH
HH                                          EACH "H"
HH                                        REPRESENTS
HHH                                           31
HHH                                        COUNT(S)
HHH
HHHHH
HHHHHHHHHHHHHHHHH H H   H   H
L-----------------------------U
```

EACH "-" ABOVE = 50.0000
L= 0.0000
U= 1450.0000
CASE NO. OF MIN. VAL. = 311
CASE NO. OF MAX. VAL. = 391

	VALUE	VALUE/S.E.
SKEWNESS	3.81	46.27
KURTOSIS	20.33	123.34

Q1= 36.3600000
Q3= 130.0000000
S-= -25.8562584
S+= 251.9176174

EACH "." BELOW = 15.0000

```
S   0     0      S
-M  1 MM MS      +                                                              M
-I....ED.E.....................................................................A
 N    DD A                                                                     X
      IE N
```

VALUE	COUNT	PERCENTS CELL	PERCENTS CUM	VALUE	COUNT	PERCENTS CELL	PERCENTS CUM	VALUE	COUNT	PERCENTS CELL	PERCENTS CUM	VALUE	COUNT	PERCENTS CELL	PERCENTS CUM
0.9400	1	0.1	0.1	36.3600	1	0.1	25.0	76.0000	5	0.3	50.6	138.7500	1	0.1	77.7
1.1000	2	0.2	0.3	36.6800	1	0.1	25.1	77.2600	1	0.1	51.0	139.1000	1	0.1	77.8
1.4400	1	0.1	0.5	36.8200	1	0.1	25.3	77.5000	3	0.3	51.3	139.1900	1	0.1	77.9
1.5600	1	0.1	0.6	36.9800	1	0.1	25.4	78.0000	1	0.1	51.4	139.5000	1	0.1	78.0
1.7200	1	0.1	0.7	37.0000	1	0.1	25.5	78.3000	1	0.1	51.5	140.9700	1	0.1	78.1
1.9400	1	0.1	0.8	37.3500	1	0.1	25.6	78.5000	1	0.1	51.6	141.5000	1	0.1	78.3
2.1300	1	0.1	0.9	37.5000	1	0.1	25.7	78.8100	1	0.1	51.8	142.6000	1	0.1	78.4
4.1200	1	0.1	1.0	37.6600	1	0.1	25.8	79.0000	1	0.1	51.9	143.1000	5	0.3	78.7
4.1400	1	0.1	1.1	37.7600	1	0.1	25.9	79.0500	1	0.1	52.0	143.7500	1	0.1	78.8
6.0000	2	0.2	1.4	38.0000	2	0.2	26.2	79.2000	1	0.1	52.1	144.0000	8	0.9	79.7
6.3900	1	0.1	1.5	38.7500	2	0.2	26.4	79.3000	1	0.1	52.2	144.3200	1	0.1	79.8
7.3600	1	0.1	1.6	39.3700	1	0.1	26.5	79.5000	3	0.3	52.5	144.7000	1	0.1	80.0
7.6500	1	0.1	1.7	39.4400	1	0.1	26.6	79.9200	1	0.1	52.7	147.2500	3	0.3	80.3
8.0000	2	0.2	1.9	39.5000	1	0.1	26.7	79.9800	1	0.1	52.8	150.0000	2	0.2	80.5
8.1600	1	0.1	2.0	39.6000	2	0.2	27.0	80.0000	3	0.3	53.1	150.2400	1	0.1	80.6
8.9700	1	0.1	2.2	39.7600	1	0.1	27.1	80.5000	1	0.1	53.2	151.0500	1	0.1	80.7
9.0000	2	0.2	2.4	39.9600	1	0.1	27.2	80.5200	1	0.1	53.3	151.5500	1	0.1	80.9
9.2600	1	0.1	2.5	40.0000	3	0.3	27.5	80.8500	1	0.1	53.5	152.0000	1	0.1	81.0
9.3800	1	0.1	2.6	40.4800	1	0.1	27.6	81.3000	1	0.1	53.6	152.0700	1	0.1	81.1

AMCCOM CUBE

BACK LINES

PAGE 4 BHOP28 PRICE & WEIGHT & CUBE

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************
* ECUB     *
************
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VARIABLE NUMBER	3	MAXIMUM	39.9780000
NUMBER OF DISTINCT VALUES .	651	MINIMUM	0.0320000
NUMBER OF VALUES COUNTED. .	883	RANGE	39.9460000
NUMBER OF VALUES NOT COUNTED	0	VARIANCE	50.5026033
		ST.DEV.	7.1121448
		(Q3-Q1)/2	3.1320000
		MX.ST.SC.	4.61
		MN.ST.SC.	-1.01

	ESTIMATE	ST.ERROR	95% CONFIDENCE LOWER	95% CONFIDENCE UPPER
MEAN	7.2022684	0.2393427	6.7325207	7.6720162
MEDIAN	4.4570000	0.1567714		
MODE	NOT UNIQUE			

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  H
  H
  H
  HH                                        EACH "H"
  HH                                        REPRESENTS
  HHH                                          26
  HHH                                        COUNT(S)
  HHHH
 HHHHHHH H
 HHHHHHHHHHHHHHHHHHHHHHHHHHHH H
L----------------------------U
```

EACH "-" ABOVE = 1.5000
L= 0.0000
U= 43.5000

CASE NO. OF MIN. VAL. = 389
CASE NO. OF MAX. VAL. = 28E

	VALUE	VALUE/S.E.		
			Q1=	2.6080000
			Q3=	8.8640000
SKEWNESS	2.09	25.36	S-=	0.0931236
KURTOSIS	4.52	27.42	S+=	14.3144132

EACH "." BELOW = 0.5000

```
S      Q         Q          S
M      1  M    M 3          +                                          M
I.......E.....E.............................................................A
N         D    A                                                           X
          I    N
```

VALUE	COUNT	PERCENTS CELL	PERCENTS CUM	VALUE	COUNT	PERCENTS CELL	PERCENTS CUM	VALUE	COUNT	PERCENTS CELL	PERCENTS CUM	VALUE	COUNT	PERCENTS CELL	PERCENTS CUM
0.03200	2	0.2	0.2	2.69800	1	0.1	27.0	4.77800	1	0.1	53.9	9.82800	1	0.1	78.4
0.04000	1	0.1	0.3	2.70000	1	0.1	27.1	4.80000	5	0.6	54.5	9.84900	1	0.1	78.5
0.16000	1	0.1	0.5	2.70400	2	0.2	27.3	4.80900	1	0.1	54.6	9.89600	3	0.3	78.8
0.40000	1	0.1	0.6	2.73500	2	0.2	27.5	4.83600	1	0.1	54.7	9.90000	1	0.1	78.9
0.60400	1	0.1	0.7	2.73600	1	0.1	27.6	4.92600	2	0.2	54.9	9.91200	2	0.2	79.2
0.60900	3	0.3	1.0	2.73900	3	0.3	28.0	4.92900	2	0.2	55.2	9.92000	1	0.1	79.3
0.65700	1	0.1	1.1	2.74600	1	0.1	28.1	4.94200	2	0.2	55.4	10.04400	1	0.1	79.4
0.65900	1	0.1	1.2	2.74800	1	0.1	28.2	4.95000	1	0.1	55.5	10.08000	1	0.1	79.5
0.69600	1	0.1	1.4	2.75000	1	0.1	28.3	5.00000	4	0.5	55.9	10.16800	1	0.1	79.6
0.75300	2	0.2	1.6	2.75200	1	0.1	28.4	5.01600	1	0.1	56.1	10.26100	1	0.1	79.7
0.78200	1	0.1	1.7	2.75300	1	0.1	28.5	5.02200	2	0.2	56.3	10.29200	1	0.1	79.8
0.81200	1	0.1	1.8	2.75500	1	0.1	28.7	5.04800	4	0.5	56.7	10.40400	1	0.1	80.0
0.82900	1	0.1	1.9	2.75800	1	0.1	28.8	5.05300	1	0.1	56.9	10.41600	2	0.2	80.2
0.90000	1	0.1	2.0	2.79000	3	0.3	29.1	5.06800	1	0.1	57.0	10.57600	1	0.1	80.3
0.92600	1	0.1	2.2	2.81400	1	0.1	29.2	5.08800	1	0.1	57.1	10.68000	1	0.1	80.4
1.00000	1	0.1	2.3	2.82200	1	0.1	29.3	5.09200	1	0.1	57.2	10.95600	1	0.1	80.5
1.01500	1	0.1	2.4	2.83400	1	0.1	29.4	5.13000	1	0.1	57.3	11.08800	1	0.1	80.6
1.02600	1	0.1	2.5	2.84200	1	0.1	29.6	5.17200	1	0.1	57.4	11.14100	1	0.1	80.7
1.06400	1	0.1	2.6	2.85600	2	0.2	29.8	5.20000	1	0.1	57.5	11.28600	1	0.1	80.9

AMCCOM PRICE

PAGE 2 BMDP2D PRICE & WEIGHT & CUBE RACK LINES

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************
* EPRC     *
************

VARIABLE NUMBER . . . . . . .           1        MAXIMUM      398121.0000000
NUMBER OF DISTINCT VALUES .           741        MINIMUM           0.3900000
NUMBER OF VALUES COUNTED. .           883        RANGE        398120.6100006
NUMBER OF VALUES NOT COUNTED            0        VARIANCE    ***************
                                                 ST.DEV.       15538.5223630
                                                 (Q3-Q1)/2       809.5200000
                                                 MX.ST.SC.          25.41
                                                 MN.ST.SC.          -0.21

                 ESTIMATE        ST.ERROR        95% CONFIDENCE
                                                 LOWER          UPPER
MEAN         3283.6535447     522.9129115    2257.3547121   4309.9523773
MEDIAN        700.0000000      35.2761179
MODE        13129.0000000
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H
H
H
H                                        EACH "H"
H                                        REPRESENTS
H                                           85
H                                        COUNT(S)
H
H
HHHH   HH                       H
L---------------------------------U

      EACH "-" ABOVE =   15000.0000
                    L=       0.0000
                    U=  435000.0000
CASE NO. OF MIN. VAL. =  819
CASE NO. OF MAX. VAL. =  843

                                          Q1=  288.0000000
              VALUE    VALUE/S.E.         Q3= 1907.0400000
SKEWNESS      19.79       240.14          S-=*************
KURTOSIS     477.34      2695.38          S+=18822.1759077

      EACH "." BELOW =    5000.0000

  S  Q  S
  -  MN M+
---SE.D.....................................................M
   NA D'                                                     A
    N E                                                      X
```

VALUE	COUNT	PERCENTS CELL	PERCENTS CUM	VALUE	COUNT	PERCENTS CELL	PERCENTS CUM	VALUE	COUNT	PERCENTS CELL	PERCENTS CUM	VALUE	COUNT	PERCENTS CELL	PERCENTS CUM
0.39000	1	0.1	0.1	287.82	1	0.1	24.8	659.84	1	0.1	49.8	2007.7	1	0.1	76.3
0.52000	1	0.1	0.2	288.00	2	0.2	25.0	700.00	2	0.2	50.1	2016.3	1	0.1	76.4
3.2400	1	0.1	0.3	292.50	1	0.1	25.1	702.21	1	0.1	50.2	2030.0	1	0.1	76.6
8.0000	1	0.1	0.5	292.98	1	0.1	25.3	703.80	1	0.1	50.3	2030.6	1	0.1	76.7
22.440	1	0.1	0.6	293.00	1	0.1	25.4	704.40	1	0.1	50.4	2040.0	1	0.1	76.8
23.530	1	0.1	0.7	294.55	1	0.1	25.5	711.62	1	0.1	50.5	2047.5	1	0.1	76.9
27.040	2	0.2	0.9	297.18	1	0.1	25.6	717.99	1	0.1	50.6	2071.4	1	0.1	77.0
28.200	1	0.1	1.0	297.50	1	0.1	25.7	724.00	4	0.5	51.1	2083.4	1	0.1	77.1
29.050	1	0.1	1.1	299.52	1	0.1	25.8	725.20	2	0.2	51.3	2106.0	1	0.1	77.2
31.280	1	0.1	1.2	299.82	1	0.1	25.9	726.60	1	0.1	51.4	2130.0	1	0.1	77.3
33.020	1	0.1	1.4	301.29	1	0.1	26.0	730.66	1	0.1	51.5	2135.0	1	0.1	77.5
33.660	1	0.1	1.5	301.40	1	0.1	26.2	730.80	1	0.1	51.6	2137.2	1	0.1	77.6
34.020	1	0.1	1.6	303.71	1	0.1	26.3	741.66	1	0.1	51.8	2146.3	1	0.1	77.7
39.300	1	0.1	1.7	303.75	1	0.1	26.4	743.60	2	0.2	52.0	2172.0	1	0.1	77.8
40.560	1	0.1	1.8	308.25	1	0.1	26.5	748.50	3	0.3	52.3	2192.0	2	0.2	78.0
40.950	1	0.1	1.9	308.49	1	0.1	26.6	756.00	1	0.1	52.4	2194.0	1	0.1	78.1
41.630	1	0.1	2.0	308.61	1	0.1	26.7	762.50	1	0.1	52.5	2230.8	2	0.2	78.4
41.820	1	0.1	2.2	310.00	1	0.1	26.8	763.65	1	0.1	52.7	2260.7	1	0.1	78.5
45.630	1	0.1	2.3	312.18	1	0.1	27.0	766.64	1	0.1	52.8	2275.0	1	0.1	78.6

AMCCOM WEIGHT

PAGE 3 BMDP2D PRICE & WEIGHT & CODE

BULK LINES

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*************
* EWGT      *
*************

VARIABLE NUMBER . . . . . .          2
NUMBER OF DISTINCT VALUES .         50
NUMBER OF VALUES COUNTED. .         52
NUMBER OF VALUES NOT COUNTED         0
```

MAXIMUM	19680.0000000
MINIMUM	36.4200000
RANGE	19643.5800000
VARIANCE	6158377.4051492
ST.DEV.	2456.3752221
(Q3-Q1)/2	539.5375000
MX.ST.SC.	7.39
MN.ST.SC.	-0.49

	ESTIMATE	ST.ERROR	95% CONFIDENCE LOWER	95% CONFIDENCE UPPER
MEAN	1429.0594231	356.1079740	633.8354364	2224.2793498
MEDIAN	634.5150000	150.5776392		
MODE	NOT UNIQUE			

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                                                           H
                                                           H
                                                           H
                                                           H
                                                           H
                                                           H
                                                           H
                                                           H
                                                           HH
                                                           HHHHH         H
                                                          L----------------U
```

EACH 'H' REPRESENTS 4 COUNT(S)

EACH '-' ABOVE = 1500.0000

L= 0.0000

U= 22500.0000

CASE NO. OF MIN. VAL. = 48

CASE NO. OF MAX. VAL. = 51

	VALUE	VALUE/S.E.
SKEWNESS	5.11	15.05
KURTOSIS	29.26	43.06

Q1= 313.6650000

Q3= 1392.9400000

S-=-1427.3157950

S+= 4285.4346451

EACH '.' BELOW = 200.0000

```
S      Q   L          S
-   MI M   M          +
.......I..E...E.....................................................M
       N  D   A                                                    A
          I   N                                                    X
```

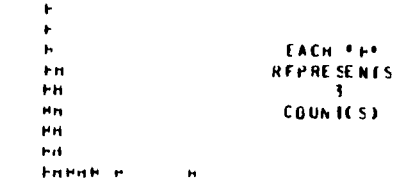
VALUE	COUNT	PERCENTS CELL	PERCENTS CUM	VALUE	COUNT	PERCENTS CELL	PERCENTS CUM	VALUE	COUNT	PERCENTS CELL	PERCENTS CUM	VALUE	COUNT	PERCENTS CELL	PERCENTS CUM
36.42	1	1.9	1.9	323.10	1	1.9	28.8	761.40	1	1.9	53.8	1599.00	1	1.9	78.8
72.84	1	1.9	3.8	333.00	1	1.9	30.8	767.01	1	1.9	55.8	1924.00	1	1.9	80.8
135.00	1	1.9	5.8	336.60	1	1.9	32.7	813.07	1	1.9	57.7	2192.00	1	1.9	82.7
148.50	1	1.9	7.7	342.45	1	1.9	34.6	899.00	1	1.9	59.6	2240.00	1	1.9	84.6
150.30	1	1.9	9.6	356.31	1	1.9	36.5	913.00	1	1.9	61.5	2460.00	2	3.8	88.5
160.65	1	1.9	11.5	356.50	1	1.9	38.5	1016.68	1	1.9	63.5	2646.00	1	1.9	90.4
161.55	1	1.9	13.5	358.53	1	1.9	40.4	1054.00	1	1.9	65.4	2982.57	1	1.9	92.3
164.70	1	1.9	15.4	383.40	1	1.9	42.3	1073.25	1	1.9	67.3	3324.15	1	1.9	94.2
178.65	1	1.9	17.3	431.00	1	1.9	44.2	1112.50	1	1.9	69.2	4920.00	1	1.9	96.2
181.80	1	1.9	19.2	492.30	1	1.9	46.2	1278.72	1	1.9	71.2	6105.00	1	1.9	98.1
190.80	2	3.8	23.1	543.50	1	1.9	48.1	1304.00	1	1.9	73.1	19680.00	1	1.9	100.0
305.10	1	1.9	25.0	633.84	1	1.9	50.0	1344.60	1	1.9	75.0				
322.63	1	1.9	26.9	635.19	1	1.9	51.9	1441.28	1	1.9	76.9				

****
* ECUB *
****

VARIABLE NUMBER	3
NUMBER OF DISTINCT VALUES .	50
NUMBER OF VALUES COUNTED. .	52
NUMBER OF VALUES NOT COUNTED	0

MAXIMUM	915.9880000
MINIMUM	0.3360000
RANGE	915.6520000
VARIANCE	21429.8486648
ST.DEV.	147.7492764
COEF-QUART	29.0762500
MX-ST.DEV.	5.42
MN-ST.DEV.	-0.79

	ESTIMATE	ST.ERROR	95% CONFIDENCE LOWER	UPPER
MEAN	115.7631154	20.4893381	74.6254549	156.8987759
MEDIAN	71.6330000	10.1336566		
MODE	NOT UNIQUE			

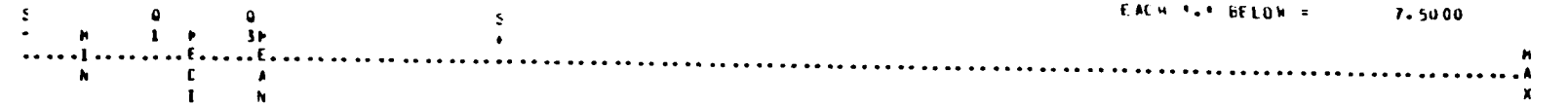


EACH "*" ABOVE = 75.0000
L= 0.0000
U= 1275.0000
CASE NO. OF MIN. VAL. = 26
CASE NO. OF MAX. VAL. = 15

	VALUE	VALUE/S.E.
SKEWNESS	3.59	10.57
KURTOSIS	14.82	21.81

Q1= 46.5050000
Q3= 104.6575000
S-= -31.9616610
S+= 263.5123517

EACH "." BELOW = 7.5000



VALUE	COUNT	PERCENTS CELL	CUM	VALUE	COUNT	PERCENTS CELL	CUM	VALUE	COUNT	PERCENTS CELL	CUM	VALUE	COUNT	PERCENTS CELL	CUM
0.3360	1	1.9	1.9	47.1820	1	1.9	26.9	61.1800	1	1.9	55.8	116.0480	1	1.9	80.8
40.5160	1	1.9	3.8	47.3580	1	1.9	28.8	62.3200	1	1.9	57.7	123.8160	1	1.9	82.7
40.9200	1	1.9	5.8	49.2280	1	1.9	30.8	83.0000	1	1.9	59.6	134.4000	1	1.9	84.6
41.4160	1	1.9	7.7	50.0960	1	1.9	32.7	84.0720	1	1.9	61.5	135.6560	1	1.9	86.5
41.8500	1	1.9	9.6	52.5760	2	3.8	36.5	89.0320	1	1.9	63.5	193.5360	1	1.9	88.5
41.8540	1	1.9	11.5	53.9280	1	1.9	38.5	91.7600	1	1.9	65.4	209.8090	1	1.9	90.4
43.5720	1	1.9	13.5	54.2640	1	1.9	40.4	92.7520	1	1.9	67.3	295.7400	1	1.9	92.3
44.2680	1	1.9	15.4	56.4610	2	3.8	44.2	94.3640	1	1.9	69.2	370.5120	1	1.9	94.2
44.2960	1	1.9	17.3	66.5680	1	1.9	46.2	99.5250	1	1.9	71.2	451.4160	1	1.9	96.2
44.4800	1	1.9	19.2	67.0120	1	1.9	48.1	103.5480	1	1.9	73.1	451.6880	1	1.9	98.1
44.5160	1	1.9	21.2	69.6660	1	1.9	50.0	103.6670	1	1.9	75.0	915.9880	1	1.9	100.0
45.3840	1	1.9	23.1	73.6000	1	1.9	51.9	105.6480	1	1.9	76.9				
45.8280	1	1.9	25.0	81.0320	1	1.9	53.8	112.9220	1	1.9	78.8				

NUMBER OF INTEGER WORDS OF STORAGE USED IN PRECEDING PROBLEM 1024
CPU TIME USED IN PRECEDING PROBLEM 12.933 SECONDS
CUMULATIVE CPU TIME USED 12.933 SECONDS

EPAC

VARIABLE NUMBER	1
NUMBER OF DISTINCT VALUES	50
NUMBER OF VALUES COUNTED	52
NUMBER OF VALUES NOT COUNTED	0

MAXIMUM	110720.0000000
MINIMUM	232.0000000
RANGE	110488.0000000
VARIANCE	**********
ST.DEV.	25819.0055416
(63-61)/2	7275.7275000
MX-ST.SC.	3.61
MN-ST.SC.	-0.67

	ESTIMATE	ST.ERROR	95% CONFIDENCE LOWER	UPPER
MEAN	17548.8723077	3579.2037846	10363.3209789	24734.4236165
MEDIAN	7880.2400000	1435.1057955		
MODE	NOT UNIQUE			

EACH '*' REPRESENTS 1 COUNT(S)

```
H
H
H
H
HH
HH
HH
HH
HHHHHH H  HH HH
L----------------U
```

EACH '-' ABOVE = 7500.0000
L = 0.0000
U = 122500.0000
CASE NO. OF MIN. VAL. = 48
CASE NO. OF MAX. VAL. = 43

	VALUE	VALUE/S.E.	
SKEWNESS	2.27	6.08	Q1= 3923.6800000 Q3=18475.1350000 S=+8261.1332339
KURTOSIS	4.46	6.56	S+=43358.8776456

EACH '.' BELOW = 1000.0000

```
S         Q         M         Q         S                                                                   M
-         1         E         3         +                                                                   A
.........I.........E.........E.....................................................................................A
         N         D         A                                                                             X
                   I
```

VALUE	COUNT	PERCENTS CELL	CUM	VALUE	COUNT	PERCENTS CELL	CUM	VALUE	COUNT	PERCENTS CELL	CUM	VALUE	COUNT	PERCENTS CELL	CUM
232.0	1	1.9	1.9	3934.6	1	1.9	26.9	8110.4	1	1.9	53.8	26134.0	1	1.9	80.8
283.9	1	1.9	3.8	4011.4	1	1.9	28.8	9198.1	1	1.9	55.8	26139.6	1	1.9	82.7
325.5	1	1.9	5.8	4351.1	1	1.9	30.8	8340.6	1	1.9	57.7	32248.0	1	1.9	84.6
464.0	1	1.9	7.7	4427.8	1	1.9	32.7	8435.0	1	1.9	59.6	32748.5	1	1.9	86.5
825.9	1	1.9	9.6	4647.0	2	3.8	36.5	9337.9	1	1.9	61.5	39009.0	1	1.9	88.5
1219.8	1	1.9	11.5	4733.4	1	1.9	38.5	9704.7	1	1.9	63.5	42496.0	1	1.9	90.4
1395.0	1	1.9	13.5	4979.1	1	1.9	40.4	11227.5	1	1.9	65.4	57704.0	1	1.9	92.3
2198.9	1	1.9	15.4	5048.5	1	1.9	42.3	11800.8	1	1.9	67.3	60961.5	1	1.9	94.2
2212.6	1	1.9	17.3	5480.0	1	1.9	44.2	11990.2	1	1.9	69.2	84562.0	1	1.9	96.2
3356.5	1	1.9	19.2	6033.0	1	1.9	46.2	13003.0	2	3.8	73.1	104024.0	1	1.9	98.1
3616.8	1	1.9	21.2	7430.9	1	1.9	48.1	18406.0	1	1.9	75.0	110720.0	1	1.9	100.0
3660.6	1	1.9	23.1	7869.3	1	1.9	50.0	18544.3	1	1.9	76.9				
3912.7	1	1.9	25.0	7851.2	1	1.9	51.9	26006.0	1	1.9	78.8				

AVSCOM WEIGHT

BIN LINES

```
************
* EWGT     *
************
                                                      MAXIMUM         72.5000000
                                                      MINIMUM          0.0100000
                                                      RANGE           72.4900000      H
VARIABLE NUMBER . . . . . . .         2               VARIANCE        44.9315567      H
NUMBER OF DISTINCT VALUES .         595               ST.DEV.          6.7031005      H
NUMBER OF VALUES COUNTED. .        5382               (Q3-Q1)/2        1.9150000      H                                  EACH "H"
NUMBER OF VALUES NOT COUNTED        299               MX.ST.SC.       10.22           H                                  REPRESENTS
                                                      MN.ST.SC.       -0.60           H                                     301
                                                                                      HH                                  COUNT(S)
                                                           95% CONFIDENCE             HH
                     ESTIMATE        ST.ERROR         LOWER           UPPER           HHH
MEAN                 3.9998811       0.0913701        3.8207588       4.1790034       HHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHH  H H H
MEDIAN               1.7400000       0.0750556                                       L-----------------------------------U
MODE                 1.0000000

                                                                                              EACH "-" ABOVE =       2.0000
                                                                                                          L=         0.0000
                                                                                                          U=        74.0000
                                                                                      CASE NO. OF MIN. VAL. =  276
                                                                                      CASE NO. OF MAX. VAL. = 2052

                                                                                                                  Q1=     0.5700000
                                                                                         VALUE     VALUE/S.E.     Q3=     4.4000000
                                                                      SKEWNESS            4.20        125.65      S-=    -2.7032194
                                                                      KURTOSIS           24.50        366.89      S+=    10.7029816

                                                                                              EACH "." BELOW =       0.7500
              S    Q     Q        S
              -   MMM   MS        +                                                                                  M
              ----IOE...E.........................................................................................A
                  MOD    A                                                                                         X
                   EI    N
```

VALUE	COUNT	PERCENTS CELL	CUM	VALUE	COUNT	PERCENTS CELL	CUM	VALUE	COUNT	PERCENTS CELL	CUM	VALUE	COUNT	PERCENTS CELL	CUM
0.010000	7	0.1	0.1	1.860000	1	0.0	51.2	4.890000	1	0.0	77.6	12.400000	3	0.1	92.2
0.020000	22	0.4	0.5	1.870000	2	0.0	51.2	4.900000	1	0.0	77.7	12.470000	1	0.0	92.3
0.030000	5	0.1	0.6	1.880000	11	0.2	51.4	4.920000	1	0.0	77.7	12.500000	7	0.1	92.4
0.040000	16	0.3	0.9	1.890000	7	0.1	51.6	5.000000	105	2.0	79.6	12.540000	2	0.0	92.4
0.050000	21	0.4	1.3	1.900000	5	0.1	51.7	5.040000	2	0.0	79.7	12.560000	1	0.0	92.4
0.060000	27	0.5	1.8	1.920000	11	0.2	51.9	5.070000	1	0.0	79.7	12.760000	2	0.0	92.5
0.070000	40	0.7	2.6	1.930000	1	0.0	51.9	5.120000	4	0.1	79.8	12.780000	1	0.0	92.5
0.080000	32	0.6	3.2	1.940000	6	0.1	52.0	5.130000	2	0.0	79.8	12.800000	2	0.0	92.5
0.090000	7	0.1	3.3	1.960000	2	0.0	52.0	5.140000	2	0.0	79.8	12.840000	2	0.0	92.6
0.100000	79	1.5	4.8	1.980000	1	0.0	52.0	5.200000	7	0.1	80.0	12.920000	8	0.1	92.7
0.110000	1	0.0	4.8	2.000000	204	3.8	55.8	5.220000	5	0.1	80.1	13.000000	8	0.1	92.9
0.120000	24	0.4	5.2	2.030000	1	0.0	55.9	5.250000	1	0.0	80.1	13.200000	6	0.1	93.0
0.130000	41	0.8	6.0	2.040000	4	0.1	55.9	5.270000	1	0.0	80.1	13.320000	1	0.0	93.0
0.140000	13	0.2	6.2	2.050000	8	0.1	56.1	5.280000	3	0.1	80.2	13.340000	1	0.0	93.0
0.150000	11	0.2	6.4	2.070000	2	0.0	56.1	5.400000	8	0.1	80.3	13.500000	5	0.1	93.1
0.160000	8	0.1	6.6	2.080000	4	0.1	56.2	5.440000	1	0.0	80.3	13.520000	1	0.0	93.1
0.170000	24	0.4	7.0	2.100000	11	0.2	56.4	5.480000	1	0.0	80.3	13.530000	1	0.0	93.1
0.180000	10	0.2	7.2	2.130000	2	0.0	56.4	5.500000	23	0.4	80.8	13.600000	8	0.1	93.3
0.190000	1	0.0	7.2	2.140000	1	0.0	56.4	5.510000	1	0.0	80.8	13.680000	2	0.0	93.3

PAGE 4 BHOP2D PRICE & WEIGHT & CUBE

AVSCOM CUBE

BIN LINES

```
************
* ECUB     *
************

VARIABLE NUMBER . . . . . . .          3      MAXIMUM        2.5000000
NUMBER OF DISTINCT VALUES .          737      MINIMUM        0.0010000
NUMBER OF VALUES COUNTED. .         5385      RANGE          2.4990000
NUMBER OF VALUES NOT COUNTED         296      VARIANCE       0.1544122
                                              ST.DEV.        0.3929532
                                              (Q3-Q1)/2      0.1575000
                                              MX.ST.SC.      5.63
                                              MN.ST.SC.     -0.73

                                                   95% CONFIDENCE
           ESTIMATE      ST.ERROR         LOWER           UPPER
MEAN       0.2890756     0.0053549        0.2785779       0.2995733
MEDIAN     0.1240000     0.0046180
MODE       0.0360000

H
H
H
H
H                                                        EACH "H"
HH                                                       REPRESENTS
HH                                                         212
HHH                                                      COUNT(S)
HHHH
HHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHH       H
L---------------------------------------U

                          EACH "-" ABOVE =      0.0750
                                       L=       0.0000
                                       U=       2.7750
                CASE NO. OF MIN. VAL. =  273
                CASE NO. OF MAX. VAL. = 2052

                                               Q1=    0.0400000
                    VALUE    VALUE/S.E.        Q3=    0.3550000
SKEWNESS            2.06        61.61          S-=   -0.1030776
KURTOSIS            3.93        58.80          S+=    0.6820280

                                      EACH "." BELOW =    0.0250

S  0   M    M        Q        S
-  MM  E    E        3        +
-----MO---E-----E...................................................M
     MO   D     A                                                   A
     E    I     N                                                   X
```

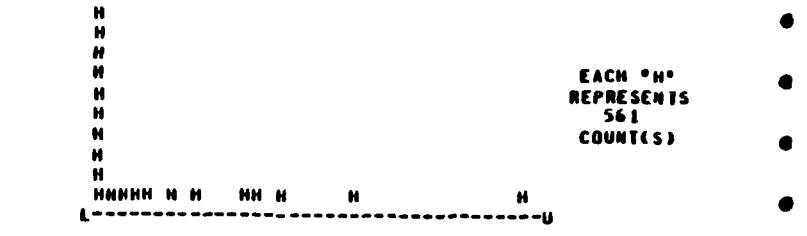
VALUE	COUNT	PERCENTS CELL	PERCENTS CUM	VALUE	COUNT	PERCENTS CELL	PERCENTS CUM	VALUE	COUNT	PERCENTS CELL	PERCENTS CUM	VALUE	COUNT	PERCENTS CELL	PERCENTS CUM
0.0010000	34	0.6	0.6	0.2130000	2	0.0	64.1	0.5300000	2	0.0	82.3	0.9940000	4	0.1	91.8
0.0020000	42	0.8	1.4	0.2150000	1	0.0	64.1	0.5310000	1	0.0	82.3	0.9980000	2	0.0	91.8
0.0030000	23	0.4	1.8	0.2160000	20	0.4	64.5	0.5320000	2	0.0	82.4	1.0000000	14	0.3	92.1
0.0040000	40	0.7	2.6	0.2180000	2	0.0	64.5	0.5340000	3	0.1	82.4	1.0010000	2	0.0	92.1
0.0050000	28	0.5	3.1	0.2190000	1	0.0	64.5	0.5400000	5	0.1	82.5	1.0020000	1	0.0	92.1
0.0060000	24	0.4	3.5	0.2200000	5	0.1	64.6	0.5410000	1	0.0	82.5	1.0040000	5	0.1	92.2
0.0070000	27	0.5	4.0	0.2220000	12	0.2	64.9	0.5440000	1	0.0	82.6	1.0050000	2	0.0	92.3
0.0080000	25	0.5	4.5	0.2230000	1	0.0	64.9	0.5460000	1	0.0	82.6	1.0080000	4	0.1	92.3
0.0090000	20	0.4	4.9	0.2240000	5	0.1	65.0	0.5470000	3	0.1	82.6	1.0120000	1	0.0	92.4
0.0100000	67	1.2	6.1	0.2250000	31	0.6	65.6	0.5480000	1	0.0	82.7	1.0150000	2	0.0	92.4
0.0110000	10	0.2	6.3	0.2270000	8	0.1	65.7	0.5500000	3	0.1	82.7	1.0160000	4	0.1	92.5
0.0120000	21	0.4	6.7	0.2280000	6	0.1	65.8	0.5510000	1	0.0	82.7	1.0200000	4	0.1	92.6
0.0130000	22	0.4	7.1	0.2300000	4	0.1	65.9	0.5520000	8	0.1	82.9	1.0220000	1	0.0	92.6
0.0140000	47	0.9	8.0	0.2310000	23	0.4	66.3	0.5540000	1	0.0	82.9	1.0240000	2	0.0	92.6
0.0150000	23	0.4	8.4	0.2320000	3	0.1	66.4	0.5550000	2	0.0	82.9	1.0260000	1	0.0	92.6
0.0160000	68	1.3	9.7	0.2340000	7	0.1	66.5	0.5570000	3	0.1	83.0	1.0340000	1	0.0	92.6
0.0170000	33	0.6	10.3	0.2350000	2	0.0	66.5	0.5590000	1	0.0	83.0	1.0400000	15	0.3	92.9
0.0180000	67	1.2	11.5	0.2360000	1	0.0	66.6	0.5620000	3	0.1	83.1	1.0410000	1	0.0	92.9
0.0190000	27	0.5	12.0	0.2380000	1	0.0	66.6	0.5630000	1	0.0	83.1	1.0420000	2	0.0	93.0

EPRC

VARIABLE NUMBER 1
NUMBER OF DISTINCT VALUES . 3115
NUMBER OF VALUES COUNTED. . 5679
NUMBER OF VALUES NOT COUNTED 2

MAXIMUM 352000.0000000
MINIMUM 0.0700000
RANGE 351999.9300003
VARIANCE ****************
ST.DEV. 14966.2196330
(Q3-Q1)/2 235.5000000
MX.ST.SC. 23.42
MN.ST.SC. -0.10

	ESTIMATE	ST.ERROR	95% CONFIDENCE LOWER	UPPER
MEAN	1456.1138986	198.5985908	1066.7840176	1845.4429795
MEDIAN	124.0000000	4.6184043		
MODE	99.9600000			



EACH "-" ABOVE = 10000.0000
L= 0.0000
U= 370000.0000
CASE NO. OF MIN. VAL. = 273
CASE NO. OF MAX. VAL. = 5186

	VALUE	VALUE/S.E.
SKEWNESS	21.47	660.43
KURTOSIS	486.06	7476.90

Q1= 36.0000000
Q3= 507.0000000
S-=**********
S+=16422.3335324

EACH "." BELOW = 3000.0000

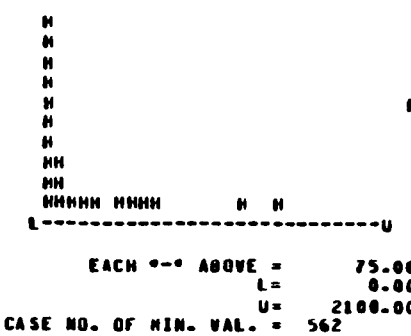
VALUE	COUNT	PERCENTS CELL	CUM	VALUE	COUNT	PERCENTS CELL	CUM	VALUE	COUNT	PERCENTS CELL	CUM	VALUE	COUNT	PERCENTS CELL	CUM
.70000E-01	1	0.0	0.0	33.520	2	0.0	23.9	100.00	1	0.0	45.2	416.00	9	0.2	72.2
0.24000	1	0.0	0.0	33.530	1	0.0	23.9	100.12	1	0.0	45.2	417.00	1	0.0	72.2
0.29000	2	0.0	0.1	33.560	1	0.0	23.9	100.46	1	0.0	45.3	417.70	1	0.0	72.2
0.33000	2	0.0	0.1	33.630	1	0.0	23.9	100.96	1	0.0	45.3	418.86	1	0.0	72.2
0.34000	1	0.0	0.1	33.640	1	0.0	24.0	101.00	5	0.1	45.4	420.00	3	0.1	72.3
0.35000	1	0.0	0.1	33.200	1	0.0	24.0	101.08	1	0.0	45.4	420.36	1	0.0	72.3
0.36000	2	0.0	0.2	33.720	1	0.0	24.0	101.30	1	0.0	45.4	422.00	6	0.1	72.4
0.39000	1	0.0	0.2	33.760	1	0.0	24.0	101.46	3	0.1	45.4	422.60	1	0.0	72.4
0.40000	1	0.0	0.2	33.820	5	0.1	24.1	101.55	1	0.0	45.5	423.00	4	0.1	72.5
0.42000	1	0.0	0.2	33.900	1	0.0	24.1	101.76	3	0.1	45.5	424.00	1	0.0	72.5
0.43000	1	0.0	0.2	33.980	1	0.0	24.1	101.86	1	0.0	45.5	425.00	1	0.0	72.5
0.51000	3	0.1	0.3	34.060	1	0.0	24.2	101.96	1	0.0	45.6	425.20	1	0.0	72.5
0.54000	1	0.0	0.3	34.080	2	0.0	24.2	102.00	4	0.1	45.6	426.00	2	0.0	72.6
0.58000	1	0.0	0.3	34.190	1	0.0	24.2	102.06	1	0.0	45.6	427.00	1	0.0	72.6
0.60000	1	0.0	0.4	34.300	1	0.0	24.2	102.24	2	0.0	45.7	429.00	1	0.0	72.6
0.66000	2	0.0	0.4	34.320	1	0.0	24.2	102.48	1	0.0	45.7	430.00	1	0.0	72.6
0.68000	1	0.0	0.4	34.420	2	0.0	24.3	102.72	1	0.0	45.7	431.34	1	0.0	72.7
0.72000	4	0.1	0.5	34.440	1	0.0	24.3	102.92	1	0.0	45.7	434.00	2	0.0	72.7
0.74000	1	0.0	0.5	34.500	2	0.0	24.3	103.00	6	0.1	45.8	435.97	2	0.0	72.7

* ENGT *

VARIABLE NUMBER	2
NUMBER OF DISTINCT VALUES	284
NUMBER OF VALUES COUNTED	771
NUMBER OF VALUES NOT COUNTED	2

MAXIMUM	1449.0000000
MINIMUM	0.2500000
RANGE	1448.7500000
VARIANCE	13108.4513286
ST.DEV.	114.4921453
(Q3-Q1)/2	33.7500000
MX.ST.SC.	12.00
MN.ST.SC.	-0.65

	ESTIMATE	ST.ERROR	95% CONFIDENCE LOWER	95% CONFIDENCE UPPER
MEAN	74.7382490	4.1233339	66.6439399	82.8325581
MEDIAN	41.1000000	1.4145000		
MODE	NOT UNIQUE			

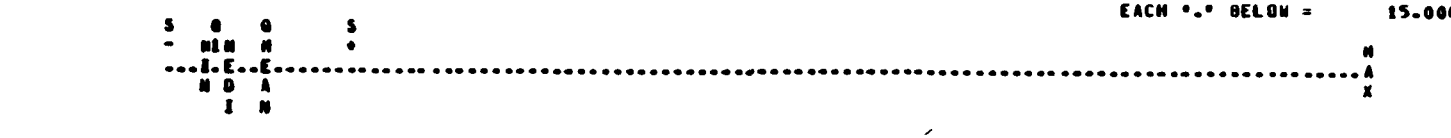


EACH "-" ABOVE = 75.0000
L= 0.0000
U= 2100.0000
CASE NO. OF MIN. VAL. = 562
CASE NO. OF MAX. VAL. = 672

	VALUE	VALUE/S.E.
SKEWNESS	5.40	61.18
KURTOSIS	45.86	259.93

Q1= 17.5000000
Q3= 85.0000000
S-= -39.7538962
S+= 189.2303943

EACH "." BELOW = 15.0000



VALUE	COUNT	PERCENTS CELL	PERCENTS CUM	VALUE	COUNT	PERCENTS CELL	PERCENTS CUM	VALUE	COUNT	PERCENTS CELL	PERCENTS CUM	VALUE	COUNT	PERCENTS CELL	PERCENTS CUM
0.2500	1	0.1	0.1	18.0000	1	0.1	26.5	45.0000	1	0.1	54.3	100.0000	4	0.5	80.7
0.6400	1	0.1	0.3	19.0000	1	0.1	26.6	45.1200	1	0.1	54.5	101.2000	1	0.1	80.8
0.8400	1	0.1	0.4	19.5300	1	0.1	26.7	45.2400	4	0.5	55.0	101.4000	1	0.1	80.9
1.7100	1	0.1	0.5	19.9800	3	0.4	27.1	45.7600	1	0.1	55.1	103.6200	1	0.1	81.1
2.5000	3	0.4	0.9	20.0000	14	1.8	28.9	46.0000	1	0.1	55.3	103.8000	2	0.3	81.3
2.8400	3	0.4	1.3	20.5200	1	0.1	29.1	46.2000	3	0.4	55.6	104.4000	1	0.1	81.5
3.0000	2	0.3	1.6	20.5500	1	0.1	29.2	47.0000	7	0.9	56.5	106.5000	1	0.1	81.6
3.5000	1	0.1	1.7	20.6000	1	0.1	29.3	47.9400	1	0.1	56.7	106.8000	1	0.1	81.7
3.8000	1	0.1	1.8	21.0000	6	0.8	30.1	48.0000	1	0.1	56.8	107.0000	5	0.6	82.4
4.0000	4	0.5	2.3	21.6000	1	0.1	30.2	48.2000	1	0.1	56.9	107.6400	1	0.1	82.5
4.3400	1	0.1	2.5	21.6200	1	0.1	30.4	48.4500	1	0.1	57.1	110.0000	4	0.5	83.0
4.5000	2	0.3	2.7	21.7000	3	0.4	30.7	49.2000	3	0.4	57.5	110.4000	2	0.3	83.3
5.0000	12	1.6	4.3	21.8000	6	0.8	31.5	50.0000	6	0.8	58.2	111.0000	1	0.1	83.4
5.6400	3	0.4	4.7	22.0000	3	0.4	31.9	50.7000	18	2.3	60.6	115.0000	1	0.1	83.5
6.0000	15	1.9	6.6	23.0000	1	0.1	32.0	51.4200	1	0.1	60.7	118.0000	2	0.3	83.8
6.2000	4	0.5	7.1	23.1000	2	0.3	32.3	52.0000	4	0.5	61.2	120.0600	1	0.1	83.9
6.4000	1	0.1	7.3	23.8000	1	0.1	32.4	52.2000	1	0.1	61.3	120.4000	2	0.3	84.2
6.5300	1	0.1	7.4	24.0000	10	1.3	33.7	53.0000	1	0.1	61.5	120.9000	1	0.1	84.3
6.9300	2	0.3	7.7	25.0000	4	0.5	34.2	54.0000	2	0.3	61.7	126.0000	1	0.1	84.4

AVSCOM CUBE

RACK LINES

PAGE 4 BMDP2D PRICE & WEIGHT & CUBE

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************
* ECUB     *
************

VARIABLE NUMBER . . . . . . .        5
NUMBER OF DISTINCT VALUES .        395
NUMBER OF VALUES COUNTED. .        772
NUMBER OF VALUES NOT COUNTED         1

MAXIMUM         40.0000000
MINIMUM          0.0200000
RANGE           39.9800000
VARIANCE        45.3985198
ST.DEV.          6.7378424
(Q3-Q1)/2        3.0495000
MX.ST.SC.        4.84
MN.ST.SC.       -1.09

                                            95% CONFIDENCE
              ESTIMATE      ST.ERROR      LOWER         UPPER
MEAN          7.3749858     0.2425003     6.8989467     7.8510248
MEDIAN        4.6950000     0.1818654
MODE          6.0000000

 H
 HH
 HH
 HH                                         EACH "H"
 HH                                        REPRESENTS
 HHH                                           20
 HHH                                        COUNT(S)
 HHHHH
 HHHHHHH  H
HHHHHHHHHHHHHHHHHHHH HHHHH  H
L---------------------------U

      EACH "-" ABOVE =       1.5000
                   L=        0.0000
                   U=       42.0000
CASE NO. OF MIN. VAL. =  562
CASE NO. OF MAX. VAL. =  702

                                        Q1=    2.9460000
             VALUE    VALUE/S.E.        Q3=    9.0450000
SKEWNESS      2.05         23.30        S-=    0.6371434
KURTOSIS      4.55         25.83        S+=   14.1128281

      EACH "." BELOW =       0.5000

 S  Q        Q      S
M-  1  M M  M  3      +                                        M
I.......E.D..E........................................................A
N       O O  A                                                 X
        I E  N
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VALUE	COUNT	PERCENTS CELL	PERCENTS CUM	VALUE	COUNT	PERCENTS CELL	PERCENTS CUM	VALUE	COUNT	PERCENTS CELL	PERCENTS CUM	VALUE	COUNT	PERCENTS CELL	PERCENTS CUM
0.02000	1	0.1	0.1	2.96400	3	0.4	25.8	4.54500	1	0.1	48.8	9.20000	1	0.1	75.8
0.28000	4	0.5	0.6	2.97900	1	0.1	25.9	4.54800	1	0.1	49.0	9.31000	6	0.8	76.6
0.35000	3	0.4	1.0	2.98200	1	0.1	26.0	4.56800	1	0.1	49.1	9.39200	1	0.1	76.7
0.42000	1	0.1	1.2	2.98900	2	0.3	26.3	4.59000	1	0.1	49.2	9.48800	1	0.1	76.8
0.46300	1	0.1	1.3	2.99000	1	0.1	26.4	4.60000	2	0.3	49.5	9.60000	2	0.3	77.1
0.56000	1	0.1	1.4	3.00000	6	0.8	27.2	4.62000	1	0.1	49.6	9.63200	1	0.1	77.2
0.77000	2	0.3	1.7	3.00300	1	0.1	27.3	4.62300	1	0.1	49.7	9.71000	2	0.3	77.5
0.84000	1	0.1	1.8	3.02200	1	0.1	27.5	4.64700	1	0.1	49.9	9.86200	1	0.1	77.6
1.05000	1	0.1	1.9	3.06000	2	0.3	27.7	4.69000	1	0.1	50.0	10.00000	1	0.1	77.7
1.34000	1	0.1	2.1	3.07500	1	0.1	27.8	4.70000	2	0.3	50.3	10.12800	1	0.1	77.8
1.73700	2	0.3	2.3	3.07600	3	0.4	28.2	4.71600	1	0.1	50.4	10.20000	2	0.3	78.1
1.87600	1	0.1	2.5	3.12500	1	0.1	28.4	4.71800	1	0.1	50.5	10.26100	6	0.8	78.9
2.00000	1	0.1	2.6	3.12600	1	0.1	28.5	4.72800	1	0.1	50.6	10.41000	5	0.6	79.5
2.01700	1	0.1	2.7	3.14000	2	0.3	28.8	4.80000	5	0.6	51.3	10.54000	1	0.1	79.7
2.03500	1	0.1	2.8	3.14600	1	0.1	28.9	4.82200	3	0.4	51.7	10.62200	1	0.1	79.8
2.04000	1	0.1	3.0	3.15700	1	0.1	29.0	4.84000	1	0.1	51.8	10.85400	3	0.4	80.2
2.05100	1	0.1	3.1	3.16000	3	0.4	29.4	4.85500	1	0.1	51.9	10.92300	1	0.1	80.3
2.06200	4	0.5	3.6	3.18000	1	0.1	29.5	4.87200	1	0.1	52.1	10.92800	3	0.4	80.7
2.06700	2	0.3	3.9	3.19600	1	0.1	29.7	4.93100	4	0.5	52.6	11.24400	2	0.3	81.0

AVSCOM PRICE

RACK LINES

PAGE 2 SNBP20 PRICE & WEIGHT & CUBE

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************
* EPRC     *
************

VARIABLE NUMBER . . . . . . .      1      MAXIMUM      111100.0000000
NUMBER OF DISTINCT VALUES .      459      MINIMUM           2.7300000
NUMBER OF VALUES COUNTED. .      773      RANGE        111097.2700000
NUMBER OF VALUES NOT COUNTED       0      VARIANCE   ****************
                                          ST.DEV.       10612.0616300
                                          (Q3-Q1)/2      2311.0000000
                                          MX.ST.SC.         9.97
                                          MN.ST.SC.        -0.50

                                                   95% CONFIDENCE
               ESTIMATE        ST.ERROR          LOWER          UPPER
MEAN       5315.8300466   381.6893276    4566.5660064   6065.1100867
MEDIAN     1785.0000000   141.1622066
MODE      32428.0000000
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H
H
H
H                                   EACH "H"
H                                   REPRESENTS
H                                   58
H                                   COUNT(S)
H
HH
HHHHHHHHHHHHH  HH  H  H
L-----------------------------U

           EACH "-" ABOVE =      5000.0000
                        L=          0.0000
                        U=     140000.0000
CASE NO. OF MIN. VAL. =  464
CASE NO. OF MAX. VAL. =  732

                                       Q1=  446.0000000
              VALUE    VALUE/S.E.      Q3= 5068.0000000
SKEWNESS       4.60        52.24       S-=-5296.2235515
KURTOSIS      28.94       164.23       S+=15927.8996845

           EACH "." BELOW =      1000.0000

S     M   M       S                     M                                                        M
-     MM  M       +                     O                                                        A
------IE--E-----------------------------O--------------------------------------------------------A
      ND  A                             D                                                        X
       I  N                             E
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VALUE	COUNT	PERCENTS CELL	PERCENTS CUM	VALUE	COUNT	PERCENTS CELL	PERCENTS CUM	VALUE	COUNT	PERCENTS CELL	PERCENTS CUM	VALUE	COUNT	PERCENTS CELL	PERCENTS CUM
2.7300	1	0.1	0.1	356.00	1	0.1	21.1	1499.4	1	0.1	45.5	4647.0	1	0.1	74.1
3.9000	1	0.1	0.3	359.00	4	0.5	21.6	1512.0	2	0.3	45.8	4816.0	1	0.1	74.3
22.250	1	0.1	0.4	381.76	1	0.1	21.7	1513.0	2	0.3	46.1	5006.0	1	0.1	74.4
25.350	1	0.1	0.5	385.06	1	0.1	21.9	1515.0	1	0.1	46.2	5068.0	8	1.0	75.4
41.020	2	0.3	0.8	392.00	1	0.1	22.0	1549.0	10	1.3	47.5	5106.0	6	0.8	76.2
49.620	1	0.1	0.9	394.00	2	0.3	22.3	1580.0	1	0.1	47.6	5112.0	2	0.3	76.5
50.200	3	0.4	1.3	394.44	1	0.1	22.4	1586.0	1	0.1	47.7	5145.0	6	0.8	77.2
50.600	1	0.1	1.4	396.96	1	0.1	22.5	1616.0	1	0.1	47.9	5176.0	1	0.1	77.4
55.200	1	0.1	1.6	399.51	1	0.1	22.6	1630.0	1	0.1	48.0	5186.0	1	0.1	77.5
55.900	1	0.1	1.7	399.84	4	0.5	23.2	1644.0	1	0.1	48.1	5322.0	1	0.1	77.6
56.460	1	0.1	1.8	402.00	1	0.1	23.3	1662.0	2	0.3	48.4	5355.0	1	0.1	77.7
57.030	3	0.4	2.2	402.04	1	0.1	23.4	1667.0	2	0.3	48.6	5380.0	1	0.1	77.9
57.810	2	0.3	2.5	403.00	1	0.1	23.5	1674.0	3	0.4	49.0	5418.0	1	0.1	78.0
58.560	1	0.1	2.6	414.00	1	0.1	23.7	1682.0	1	0.1	49.2	5436.0	1	0.1	78.1
62.440	1	0.1	2.7	423.45	1	0.1	23.8	1718.0	1	0.1	49.3	5530.0	2	0.3	78.4
65.200	2	0.3	3.0	432.00	1	0.1	23.9	1752.0	1	0.1	49.4	5613.0	1	0.1	78.5
67.640	2	0.3	3.2	436.19	1	0.1	24.1	1767.0	1	0.1	49.5	5656.0	1	0.1	78.7
68.090	1	0.1	3.4	439.66	1	0.1	24.2	1776.0	1	0.1	49.7	5720.0	3	0.4	79.0
69.000	1	0.1	3.5	443.90	3	0.4	24.6	1785.0	4	0.5	50.2	5743.0	6	0.8	79.8

PAGE 3 BRDP2C PRICE & WEIGHT & CUBE

AVSCOM WEIGHT

BULK LINES

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*************
* EBGT      *
*************

VARIABLE NUMBER . . . . . .       2        MAXIMUM       2612.0000000
NUMBER OF DISTINCT VALUES .      63        MINIMUM         32.0000000
NUMBER OF VALUES COUNTED. .     127        RANGE         2580.0000000
NUMBER OF VALUES NOT COUNTED      0        VARIANCE    301477.3839417
                                           ST.DEV.        549.0695620
                                           (Q3-Q1)/2      322.5000000
                                           MX.ST.SC.         3.24
                                           MN.ST.SC.        -1.46

                                                95% CONFIDENCE
              ESTIMATE        ST.ERROR       LOWER          UPPER
MEAN        832.2477953     48.7220450    735.8282999    928.6672906
MEDIAN      640.0000000     42.4352646
MODE        604.0000000
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                 H
                 HH
                 HH                   EACH 'H'
                 HH  H                REPRESENTS
                 HH  H                    3
                HHHH H                COUNT(S)
              HHHHHH HH
              HHHHHH HH H
              HHHHHHHHHHHHH HHH H
             L-------------------U

        EACH '-' ABOVE =      150.0000
                     L=         0.0000
                     U=      3150.0000
   CASE NO. OF MIN. VAL. =  124
   CASE NO. OF MAX. VAL. =  112

                                                       Q1=  518.0000000
                      VALUE    VALUE/S.E.              Q3= 1163.0000000
           SKEWNESS    1.11       5.12                 S-=  283.1782333
           KURTOSIS    1.03       2.36                 S+= 1381.3173573

        EACH '.' BELOW =       20.0000

             S         Q    MM      M                Q        S
             -         1    OE      E                3        +
M
I........................................................................A
N                           DD      A                                   X
                            E1      N
```

VALUE	COUNT	PERCENTS CELL	PERCENTS CUM	VALUE	COUNT	PERCENTS CELL	PERCENTS CUM	VALUF	COUNT	PERCENTS CELL	PERCENTS CUM	VALUF	COUNT	PERCENTS CELL	PERCENTS CUM
32.00	1	0.8	0.8	480.00	3	2.4	23.6	808.00	1	0.8	59.8	1318.00	2	1.6	83.5
55.20	3	2.4	3.1	518.00	7	5.5	29.1	842.00	5	3.9	63.8	1350.00	3	2.4	85.8
72.80	1	0.8	3.9	528.00	1	0.8	29.9	855.00	1	0.8	64.6	1398.00	1	0.8	86.6
80.00	1	0.8	4.7	538.00	1	0.8	30.7	865.57	1	0.8	65.4	1464.00	2	1.6	88.2
108.90	1	0.8	5.5	540.00	8	6.3	37.0	900.00	2	1.6	66.9	1550.00	1	0.8	89.0
172.00	1	0.8	6.3	548.00	3	2.4	39.4	929.00	1	0.8	67.7	1569.00	1	0.8	89.8
181.50	1	0.8	7.1	602.00	1	0.8	40.2	1076.00	1	0.8	68.5	1617.00	3	2.4	92.1
196.00	1	0.8	7.9	604.00	9	7.1	47.2	1080.00	2	1.6	70.1	1644.00	1	0.8	92.9
210.00	3	2.4	10.2	606.00	1	0.8	48.0	1096.00	1	0.8	70.9	1800.00	1	0.8	93.7
214.00	1	0.8	11.0	640.00	3	2.4	50.4	1105.00	2	1.6	72.4	1959.00	1	0.8	94.5
257.10	1	0.8	11.8	653.00	4	3.1	53.5	1130.00	3	2.4	74.8	1977.00	1	0.8	95.3
301.00	1	0.8	12.6	659.00	2	1.6	55.1	1163.00	4	3.1	78.0	2160.00	2	1.6	96.9
346.80	1	0.8	13.4	665.00	1	0.8	55.9	1165.00	2	1.6	79.5	2210.00	1	0.8	97.6
360.00	2	1.6	15.0	743.00	2	1.6	57.5	1200.00	1	0.8	80.3	2320.00	1	0.8	98.4
404.00	6	4.7	19.7	751.00	1	0.8	58.3	1235.00	1	0.8	81.1	2612.00	2	1.6	100.0
475.00	2	1.6	21.3	794.00	1	0.8	59.1	1306.00	1	0.8	81.9				

ECUB

VARIABLE NUMBER 3
NUMBER OF DISTINCT VALUES . 62
NUMBER OF VALUES COUNTED. . 127
NUMBER OF VALUES NOT COUNTED 0

MAXIMUM 503.0000000
MINIMUM 40.2870000
RANGE 462.7130000
VARIANCE 10190.6486223
ST.DEV. 100.9487435
(CS-41)% 24.3400000
MX.SI.SC. 3.84
MN.SI.SC. -0.75

	ESTIMATE	ST.ERROR	95% CONFIDENCE LOWER	UPPER
MEAN	115.8312913	8.9577525	98.1041624	133.5584203
MEDIAN	78.3580000	6.3498167		
MODE	78.3580000			

EACH "H" REPRESENTS 4 COUNT(S)

EACH "-" ABOVE = 25.0000
L= 25.0000
U= 550.0000
CASE NO. OF MIN. VAL. = 8
CASE NO. OF MAX. VAL. = 55

	VALUE	VALUE/S.E.
SKEWNESS	2.49	11.47
KURTOSIS	5.93	13.77

Q1= 64.3200000
Q3= 114.0000000
S-= 14.8825478
S+= 216.7800349

EACH "." BELOW = 5.0000

VALUE	COUNT	PERCENTS CELL	CUM	VALUE	COUNT	PERCENTS CELL	CUM	VALUE	COUNT	PERCENTS CELL	CUM	VALUE	COUNT	PERCENTS CELL	CUM
40.29	1	0.8	0.8	65.17	1	0.8	20.0	94.01	2	1.6	64.6	168.00	3	2.4	85.0
42.64	1	0.8	1.6	66.79	6	4.7	30.7	94.60	1	0.8	65.4	168.58	1	0.8	85.8
44.29	7	5.5	7.1	67.92	3	2.4	33.1	94.99	1	0.8	66.1	169.40	1	0.8	86.6
45.04	1	0.8	7.9	68.10	9	7.1	40.2	100.00	1	0.8	66.9	188.02	2	1.6	88.2
46.22	2	1.6	9.4	71.63	1	0.8	40.9	100.19	1	0.8	67.7	208.00	1	0.8	89.0
46.23	1	0.8	10.2	73.80	1	0.8	41.7	104.00	1	0.8	68.5	216.00	1	0.8	89.8
46.61	2	1.6	11.8	75.06	1	0.8	42.5	108.00	4	3.1	71.7	234.00	1	0.8	90.6
46.85	1	0.8	12.6	76.50	3	2.4	44.9	110.00	4	3.1	74.8	235.07	1	0.8	91.3
47.49	2	1.6	14.2	78.20	1	0.8	45.7	114.00	1	0.8	75.6	244.00	1	0.8	92.1
48.47	1	0.8	15.0	78.22	2	1.6	47.2	115.00	1	0.8	76.4	313.43	2	1.6	93.7
50.20	1	0.8	15.7	78.36	11	8.7	55.9	120.00	1	0.8	77.2	324.00	1	0.8	94.5
50.62	1	0.8	16.5	81.60	2	1.6	57.5	133.58	1	0.8	78.0	327.00	1	0.8	95.3
57.40	1	0.8	17.3	82.20	2	1.6	59.1	146.00	1	0.8	78.7	432.00	2	1.6	96.9
60.00	3	2.4	19.7	84.70	1	0.8	59.8	155.30	1	0.8	79.5	503.00	4	3.1	100.0
62.20	2	1.6	21.3	85.60	3	2.4	62.2	156.72	3	2.4	81.9				
64.32	5	3.9	25.2	85.90	1	0.8	63.0	163.20	1	0.8	82.7				

NUMBER OF INTEGER WORDS OF STORAGE USED IN PRECEDING PROBLEM 1100

* EPHC *

VARIABLE NUMBER 1
NUMBER OF DISTINCT VALUES . 64
NUMBER OF VALUES COUNTED. . 127
NUMBER OF VALUES NOT COUNTED 0

MAXIMUM 874200.0000000
MINIMUM 446.0000000
RANGE 873754.0000000
VARIANCE ****************
ST.DEV. 165274.3751982
CG3-CUBED 26309.0000000
MX.ST.SC. 5.30
MN.ST.SC. -0.32

	ESTIMATE	ST.ERR.	95% CONFIDENCE LOWER	95% CONFIDENCE UPPER
MEAN	75804.5542521	12491.0335954	50993.5787775	101315.5317273
MEDIAN	28044.0000000	7319.3614503		
MODE	11620.0000000			

EACH "H" REPRESENTS 2 COUNT(S)

EACH "-" ABOVE = 50000.0000
L= 0.0000
U= 1050000.0000
CASE NO. OF MIN. VAL. = 18
CASE NO. OF MAX. VAL. = 88

G1=10820.0000000
G3=63438.0000000

	VALUE	VALUE/S.E.
SKEWNESS	3.73	17.15
KURTOSIS	14.94	34.36

EACH "." BELOW = 7500.0000

VALUE	COUNT	PERCENTS CELL	PERCENTS CUM	VALUE	COUNT	PERCENTS CELL	PERCENTS CUM	VALUE	COUNT	PERCENTS CELL	PERCENTS CUM	VALUE	COUNT	PERCENTS CELL	PERCENTS CUM
446.0	3	2.4	2.4	10290.0	6	4.7	22.8	35350.0	1	0.8	52.0	74841.0	1	0.8	79.5
521.6	1	0.8	3.1	10820.0	8	6.3	29.1	35476.0	1	0.8	52.8	76840.0	3	2.4	81.9
1338.0	1	0.8	3.9	11620.0	9	7.1	36.2	37131.0	1	0.8	53.5	84398.0	1	0.8	82.7
2230.0	1	0.8	4.7	12559.0	2	1.6	37.8	42199.0	3	2.4	55.9	94404.0	1	0.8	83.5
2365.4	1	0.8	5.5	14970.0	1	0.8	38.6	43280.0	2	1.6	57.5	96408.0	1	0.8	84.3
2431.0	1	0.8	6.3	15428.0	1	0.8	39.4	43721.0	4	3.1	60.6	105696.0	2	1.6	85.8
2432.0	1	0.8	7.1	15435.0	1	0.8	40.2	45612.0	1	0.8	61.4	113412.0	3	2.4	88.2
3520.0	1	0.8	7.9	15954.0	1	0.8	40.9	49383.0	1	0.8	62.2	144612.0	1	0.8	89.0
4137.0	1	0.8	8.7	17160.0	1	0.8	41.7	57090.0	7	5.5	67.7	174884.0	2	1.6	90.6
5893.4	1	0.8	9.4	18366.0	1	0.8	42.5	57312.0	5	3.9	71.7	176564.0	1	0.8	91.3
6645.0	1	0.8	10.2	19062.0	2	1.6	44.1	57704.0	2	1.6	73.2	200000.0	2	1.6	92.9
7485.0	1	0.8	11.0	20580.0	1	0.8	44.9	60358.0	1	0.8	74.0	243667.0	2	1.6	94.5
7713.0	1	0.8	11.8	21640.0	2	1.6	46.5	63438.0	2	1.6	75.6	437100.0	2	1.6	96.1
8580.0	2	1.6	13.4	27549.0	1	0.8	47.2	66220.0	1	0.8	76.4	500550.0	3	2.4	98.4
9183.0	3	2.4	15.7	28044.0	4	3.1	50.4	70715.0	1	0.8	77.2	873574.0	1	0.8	99.2
9483.0	3	2.4	18.1	33644.0	1	0.8	51.2	72223.0	2	1.6	78.7	874200.0	1	0.8	100.0

CECOM WEIGHT

BIN LINES

PAGE 3 BMDP2D PRICE & WEIGHT & CUBE

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************
* EWGT     *
************
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VARIABLE NUMBER	2
NUMBER OF DISTINCT VALUES .	877
NUMBER OF VALUES COUNTED. .	5922
NUMBER OF VALUES NOT COUNTED	109

MAXIMUM	70.0000000
MINIMUM	0.0100000
RANGE	69.9900000
VARIANCE	107.6603912
ST.DEV.	10.3763380
(Q3-Q1)/2	2.0650000
MX.ST.SC.	6.23
MN.ST.SC.	-0.51

	ESTIMATE	ST.ERROR	95% CONFIDENCE LOWER	95% CONFIDENCE UPPER
MEAN	5.3121361	0.1340373	5.0478059	5.5764663
MEDIAN	1.1500000	0.0404145		
MODE	1.0000000			

```
H
H
H
H                                          EACH "H"
H                                        REPRESENTS
H                                            369
H                                         COUNT(S)
HH
HHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHH
L------------------------------------------U
```

EACH "-" ABOVE = 2.0000
L= 0.0000
U= 74.0000
CASE NO. OF MIN. VAL. = 102
CASE NO. OF MAX. VAL. = 2065

	VALUE	VALUE/S.E.		
			Q1=	0.3700000
			Q3=	4.5000000
SKEWNESS	3.32	104.33	S-=	-5.0642019
KURTOSIS	12.56	197.27	S+=	15.6884741

EACH "." BELOW = 0.7500

```
S       Q    Q              S
-      MIN   3M             *
-------I.E---E..........................................M
        N D   A                                          A
          I   N                                          X
```

VALUE	COUNT	PERCENTS CELL	PERCENTS CUM	VALUE	COUNT	PERCENTS CELL	PERCENTS CUM	VALUE	COUNT	PERCENTS CELL	PERCENTS CUM	VALUE	COUNT	PERCENTS CELL	PERCENTS CUM
0.010000	14	0.2	0.2	2.500000	35	0.6	66.3	8.120000	1	0.0	82.5	20.400000	7	0.1	92.6
0.020000	25	0.4	0.7	2.510000	1	0.0	66.3	8.140000	1	0.0	82.6	20.600000	1	0.0	92.6
0.030000	16	0.3	0.9	2.520000	4	0.1	66.4	8.160000	3	0.1	82.6	20.700000	1	0.0	92.7
0.040000	17	0.3	1.2	2.530000	1	0.0	66.4	8.190000	1	0.0	82.6	20.800000	3	0.1	92.7
0.050000	14	0.2	1.5	2.540000	2	0.0	66.4	8.250000	9	0.2	82.8	20.880000	4	0.1	92.8
0.060000	84	1.4	2.9	2.550000	8	0.1	66.5	8.320000	3	0.1	82.8	21.000000	5	0.1	92.9
0.070000	18	0.3	3.2	2.560000	10	0.2	66.7	8.340000	1	0.0	82.8	21.120000	1	0.0	92.9
0.080000	40	0.7	3.9	2.570000	1	0.0	66.7	8.350000	2	0.0	82.9	21.200000	1	0.0	92.9
0.090000	50	0.8	4.7	2.580000	1	0.0	66.8	8.400000	3	0.1	82.9	21.240000	1	0.0	92.9
0.100000	73	1.2	5.9	2.590000	1	0.0	66.8	8.410000	1	0.0	82.9	21.250000	1	0.0	92.9
0.110000	16	0.3	6.2	2.600000	12	0.2	67.0	8.430000	1	0.0	83.0	21.350000	1	0.0	92.9
0.120000	86	1.5	7.6	2.610000	4	0.1	67.0	8.470000	1	0.0	83.0	21.460000	1	0.0	93.0
0.130000	45	0.8	8.4	2.620000	1	0.0	67.1	8.500000	6	0.1	83.1	21.600000	5	0.1	93.0
0.140000	31	0.5	8.9	2.640000	5	0.1	67.1	8.520000	1	0.0	83.1	21.750000	2	0.0	93.1
0.150000	32	0.5	9.5	2.650000	1	0.0	67.2	8.550000	1	0.0	83.1	21.760000	1	0.0	93.1
0.160000	72	1.2	10.7	2.660000	3	0.1	67.2	8.580000	2	0.0	83.1	21.840000	1	0.0	93.1
0.170000	12	0.2	10.9	2.670000	1	0.0	67.2	8.640000	3	0.1	83.2	22.000000	7	0.1	93.2
0.180000	79	1.3	12.2	2.700000	6	0.1	67.3	8.700000	3	0.1	83.2	22.020000	1	0.0	93.2
0.190000	2	0.0	12.3	2.720000	3	0.1	67.4	8.710000	1	0.0	83.3	22.100000	1	0.0	93.3

PAGE 4 BBOP20 PRICE & WEIGHT & CUBE

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************
* ECUB     *
************

VARIABLE NUMBER . . . . . . .          3
NUMBER OF DISTINCT VALUES .          607
NUMBER OF VALUES COUNTED. .         5922
NUMBER OF VALUES NOT COUNTED         109

MAXIMUM        2.0000000
MINIMUM        0.0010000
RANGE          1.9990000
VARIANCE       0.1094503
ST.DEV.        0.3308327
(Q3-Q1)/2      0.0820000
MX.ST.SC.      5.40
MN.ST.SC.     -0.56
```

	ESTIMATE	ST.ERROR	95% CONFIDENCE LOWER	95% CONFIDENCE UPPER
MEAN	0.1076906	0.0042991	0.1792629	0.1961184
MEDIAN	0.0530000	0.0014454		
MODE	0.0060000			

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H
H
H
H                                        EACH "H"
H                                       REPRESENTS
H                                          343
H                                        COUNT(S)
HH
HHH
HHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHH
L----------------------------------------U
```

```
                     EACH "-" ABOVE =      0.0750
                                 L=        0.0000
                                 U=        2.7750
           CASE NO. OF MIN. VAL. =   39
           CASE NO. OF MAX. VAL. =  155

                                          Q1=     0.0180000
                    VALUE    VALUE/S.E.   Q3=     0.1020000
SKEWNESS             2.96       92.94     S-=    -0.1431420
KURTOSIS             9.32      146.39     S+=     0.5105233

                     EACH "." BELOW =      0.0200
```

```
$     Q  M     Q            $                                                M
-     MI E     M            *                                                A
------I--E-----E-----------------------------------------------------------A
      N  D     A                                                             X
         I     N
```

VALUE	COUNT	PERCENTS CELL	PERCENTS CUM	VALUE	COUNT	PERCENTS CELL	PERCENTS CUM	VALUE	COUNT	PERCENTS CELL	PERCENTS CUM	VALUE	COUNT	PERCENTS CELL	PERCENTS CUM
0.0010000	64	1.1	1.1	0.1760000	5	0.1	74.5	0.4280000	1	0.0	87.2	0.8620000	1	0.0	94.6
0.0020000	91	1.5	2.6	0.1770000	2	0.0	74.5	0.4290000	2	0.0	87.3	0.8640000	2	0.0	94.6
0.0030000	63	1.1	3.7	0.1780000	2	0.0	74.5	0.4300000	3	0.1	87.3	0.8660000	1	0.0	94.6
0.0040000	86	1.5	5.1	0.1790000	7	0.1	74.7	0.4320000	9	0.2	87.5	0.8680000	1	0.0	94.6
0.0050000	95	1.6	6.7	0.1800000	10	0.3	75.0	0.4340000	3	0.1	87.5	0.8790000	1	0.0	94.6
0.0060000	178	3.0	9.7	0.1820000	4	0.1	75.0	0.4350000	4	0.1	87.6	0.8800000	2	0.0	94.7
0.0070000	48	0.8	10.6	0.1830000	2	0.0	75.1	0.4370000	3	0.1	87.6	0.8820000	1	0.0	94.7
0.0080000	105	1.8	12.3	0.1840000	7	0.1	75.2	0.4380000	2	0.0	87.7	0.8880000	2	0.0	94.7
0.0090000	77	1.3	13.6	0.1850000	2	0.0	75.2	0.4390000	1	0.0	87.7	0.8990000	1	0.0	94.7
0.0100000	101	1.7	15.3	0.1860000	4	0.1	75.3	0.4400000	2	0.0	87.7	0.9000000	5	0.1	94.8
0.0110000	39	0.7	16.0	0.1870000	3	0.1	75.3	0.4410000	1	0.0	87.7	0.9040000	1	0.0	94.8
0.0120000	142	2.4	18.4	0.1880000	2	0.0	75.4	0.4420000	1	0.0	87.8	0.9100000	1	0.0	94.9
0.0130000	86	1.5	19.8	0.1890000	4	0.1	75.4	0.4440000	2	0.0	87.8	0.9120000	1	0.0	94.9
0.0140000	117	2.0	21.8	0.1900000	4	0.1	75.5	0.4460000	1	0.0	87.8	0.9140000	1	0.0	94.9
0.0150000	67	1.1	22.9	0.1920000	7	0.1	75.6	0.4480000	1	0.0	87.8	0.9150000	1	0.0	94.9
0.0160000	59	1.0	23.9	0.1940000	2	0.0	75.7	0.4500000	5	0.1	87.9	0.9160000	1	0.0	94.9
0.0170000	24	0.4	24.3	0.1950000	5	0.1	75.7	0.4520000	1	0.0	87.9	0.9200000	4	0.1	95.0
0.0180000	91	1.5	25.9	0.1960000	6	0.1	75.8	0.4530000	1	0.0	87.9	0.9240000	1	0.0	95.0
0.0190000	15	0.3	26.1	0.1970000	2	0.0	75.9	0.4560000	1	0.0	88.0	0.9280000	2	0.0	95.1

CECOM PRICE

BIN LINES

PAGE 2 BHOP20 PRICE & WEIGHT & CUBE

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************
* EPRC     *
************
```

VARIABLE NUMBER	1	MAXIMUM	308200.0000000
NUMBER OF DISTINCT VALUES .	3129	MINIMUM	0.0500000
NUMBER OF VALUES COUNTED. .	6029	RANGE	308199.9500000
NUMBER OF VALUES NOT COUNTED	2	VARIANCE	22612591.6137695
		ST.DEV.	4755.2698781
		(Q3-Q1)/2	242.4700000
		MX.ST.SC.	64.65
		MN.ST.SC.	-0.16

	ESTIMATE	ST.ERROR	95% CONFIDENCE LOWER	95% CONFIDENCE UPPER
MEAN	775.5094789	61.2424460	655.4523794	895.5665624
MEDIAN	160.3200000	5.1528536		
MODE	3060.0000000			

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H
H
H
H
H
H
H
H
H
HHHHH      H                      H
L-------------------------------------U
```

EACH "H" REPRESENTS 598 COUNT(S)

EACH "-" ABOVE = 10000.0000
L= 0.0000
U= 370000.0000
CASE NO. OF MIN. VAL. = 2355
CASE NO. OF MAX. VAL. = 1195

	VALUE	VALUE/S.E.
SKEWNESS	40.09	1524.54
KURTOSIS	2957.03	46880.28

Q1= 40.0600000
Q3= 533.0000000
S-=-3979.7604072
S+= 5530.7793490

EACH "." BELOW = 2500.0000

```
S Q S
- MM*
--ED.......................................................M
  MD                                                       A
   E                                                       X
```

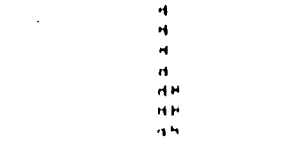
VALUE	COUNT	PERCENTS CELL	PERCENTS CUM	VALUE	COUNT	PERCENTS CELL	PERCENTS CUM	VALUE	COUNT	PERCENTS CELL	PERCENTS CUM	VALUE	COUNT	PERCENTS CELL	PERCENTS CUM
-.50000E-01	1	0.0	0.0	51.410	2	0.0	26.1	100.00	1	0.0	51.4	640.00	1	0.0	78.6
0.10000	1	0.0	0.0	51.570	1	0.0	26.1	100.24	1	0.0	51.4	651.10	1	0.0	78.6
0.16000	1	0.0	0.0	51.600	1	0.0	26.1	101.00	28	0.5	51.9	651.75	2	0.0	78.7
0.20000	2	0.0	0.1	51.660	2	0.0	26.1	101.74	4	0.1	52.0	653.35	1	0.0	78.7
0.24000	1	0.0	0.1	51.670	1	0.0	26.1	102.00	1	0.0	52.0	656.00	2	0.0	78.7
0.32000	2	0.0	0.1	51.900	1	0.0	26.2	102.70	1	0.0	52.0	657.00	1	0.0	78.7
0.35000	3	0.0	0.2	51.920	2	0.0	26.2	103.00	5	0.1	52.1	660.00	27	0.4	79.2
0.36000	1	0.0	0.2	51.960	1	0.0	26.2	103.04	2	0.0	52.1	663.00	1	0.0	79.2
0.40000	1	0.0	0.2	52.000	2	0.0	26.2	103.60	3	0.0	52.2	664.00	1	0.0	79.2
0.50000	1	0.0	0.2	52.020	1	0.0	26.3	103.84	1	0.0	52.2	665.00	4	0.1	79.3
0.51000	2	0.0	0.3	52.360	1	0.0	26.3	103.89	2	0.0	52.2	668.00	1	0.0	79.3
0.53000	5	0.1	0.3	52.400	1	0.0	26.3	104.00	2	0.0	52.2	668.38	1	0.0	79.3
0.57000	1	0.0	0.4	52.440	1	0.0	26.3	104.14	1	0.0	52.3	669.50	1	0.0	79.3
0.60000	4	0.1	0.4	52.500	2	0.0	26.3	104.45	1	0.0	52.3	671.25	1	0.0	79.3
0.61000	1	0.0	0.4	52.540	5	0.1	26.4	104.70	1	0.0	52.3	672.00	6	0.1	79.4
0.64000	1	0.0	0.5	52.560	1	0.0	26.4	104.80	3	0.0	52.3	673.56	1	0.0	79.4
0.68000	2	0.0	0.5	52.600	1	0.0	26.5	104.92	2	0.0	52.4	674.00	1	0.0	79.5
0.70000	2	0.0	0.5	52.700	1	0.0	26.5	105.00	4	0.1	52.4	675.00	4	0.1	79.5
0.80000	1	0.0	0.5	52.800	5	0.1	26.6	105.40	3	0.0	52.5	676.75	1	0.0	79.5

****
* EBGI *
****

VARIABLE NUMBER	2
NUMBER OF DISTINCT VALUES .	405
NUMBER OF VALUES COUNTED. .	653
NUMBER OF VALUES NOT COUNTED	0

MAXIMUM	2414.7200000
MINIMUM	3.0000000
RANGE	2411.7200000
VARIANCE	92770.6535940
ST.DEV.	304.5827533
(Q3-Q1)/2	92.4000000
MX.ST.SC.	7.24
MN.ST.SC.	-0.68

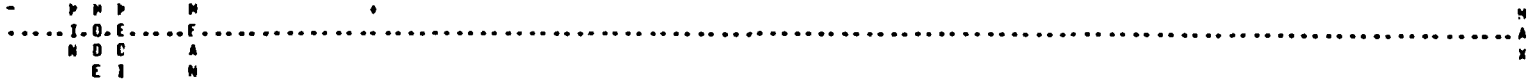
	ESTIMATE	ST-ERROR	95% CONFIDENCE LOWER	95% CONFIDENCE UPPER
MEAN	209.8875191	11.9192442	186.4827928	233.2922555
MEDIAN	100.0000000	5.6196934		
MODE	50.0000000			



EACH '-' ABOVE = 100.0000
L= 0.0000
U= 2800.0000
CASE NO. OF MIN. VAL. = 173
CASE NO. OF MAX. VAL. = 40

	VALUE	VALUE/S.E.	
SKEWNESS	3.31	34.55	Q1= 51.2000000
KURTOSIS	13.25	69.11	Q3= 216.0000000
			S-= -94.6952341
			S+= 514.4702724

EACH '.' BELOW = 20.0000



VALUE	COUNT	PERCENTS CELL	PERCENTS CUM	VALUE	COUNT	PERCENTS CELL	PERCENTS CUM	VALUE	COUNT	PERCENTS CELL	PERCENTS CUM	VALUE	COUNT	PERCENTS CELL	PERCENTS CUM
3.000	2	0.3	0.3	73.780	2	0.3	35.1	142.500	1	0.2	61.7	315.000	1	0.2	82.1
4.000	2	0.3	0.6	73.800	1	0.2	35.2	143.820	1	0.2	61.9	318.500	2	0.3	82.4
6.600	1	0.2	0.8	73.920	2	0.3	35.5	143.850	1	0.2	62.0	319.800	1	0.2	82.5
7.250	1	0.2	0.9	74.000	1	0.2	35.7	147.000	1	0.2	62.2	322.000	1	0.2	82.7
8.000	2	0.3	1.2	74.250	1	0.2	35.8	147.840	2	0.3	62.5	324.000	1	0.2	82.8
9.650	1	0.2	1.4	74.460	1	0.2	36.0	148.350	1	0.2	62.6	325.000	7	1.1	83.9
10.000	1	0.2	1.5	74.880	1	0.2	36.1	148.500	1	0.2	62.8	325.500	1	0.2	84.1
12.000	1	0.2	1.7	75.000	10	1.5	37.7	148.580	1	0.2	62.9	330.000	1	0.2	84.2
13.000	1	0.2	1.8	75.150	1	0.2	37.8	148.800	1	0.2	63.1	332.640	2	0.3	84.5
14.500	1	0.2	2.0	75.690	1	0.2	38.0	150.000	6	0.9	64.0	332.800	1	0.2	84.7
14.600	5	0.8	2.8	75.850	1	0.2	38.1	150.280	1	0.2	64.2	345.600	1	0.2	84.8
14.960	1	0.2	2.9	76.000	4	0.6	38.7	150.500	1	0.2	64.3	346.500	1	0.2	85.0
15.000	2	0.3	3.2	76.440	1	0.2	38.9	152.000	1	0.2	64.5	350.000	4	0.6	85.6
16.000	2	0.3	3.5	76.840	1	0.2	39.1	152.320	1	0.2	64.6	354.200	1	0.2	85.8
16.200	1	0.2	3.7	77.000	2	0.3	39.4	154.000	4	0.6	65.2	369.600	1	0.2	85.9
16.250	1	0.2	3.8	77.250	1	0.2	39.5	154.050	1	0.2	65.4	371.000	1	0.2	86.1
17.000	10	1.5	5.4	77.760	1	0.2	39.7	156.000	1	0.2	65.5	375.000	2	0.3	86.4
17.500	1	0.2	5.5	78.000	1	0.2	39.8	156.400	1	0.2	65.7	375.760	1	0.2	86.5
17.920	1	0.2	5.7	78.650	1	0.2	40.0	156.740	1	0.2	65.8	381.820	1	0.2	86.7
18.000	1	0.2	5.8	79.200	1	0.2	40.1	156.900	1	0.2	66.0	390.000	1	0.2	86.8

PAGE 4 BRONZE PRICE & WEIGHT & CUBE

```
************
* ECUB     *
************

VARIABLE NUMBER . . . . . . .        3      MAXIMUM          37.1700000
NUMBER OF DISTINCT VALUES .        456      MINIMUM           0.1500000
NUMBER OF VALUES COUNTED. .        653      RANGE            37.0200000
NUMBER OF VALUES NOT COUNTED         0      VARIANCE         37.0483350
                                            ST.DEV.           6.0867343
                                            (Q3-Q1)/2         2.0880000
                                            MX.ST.SC.         5.19
                                            MN.ST.SC.        -0.89

                                                  95% CONFIDENCE
            ESTIMATE      ST.ERROR          LOWER          UPPER
MEAN        5.5843982     0.2381923         5.1166916      6.0521148
MEDIAN      3.5940000     0.0854479
MODE        3.5940000
```

```
  H
  H
  H
  HH                                  EACH 'H'
 HHH                                  REPRESENTS
 HHHH                                    18
 HHHH                                 COUNT(S)
 HHHHH
 HHHHHHH
 HHHHHHHHHHHHHHHHH HHH H HHH
L----------------------------U

        EACH '-' ABOVE =        1.5000
                    L =         0.0000
                    U =        42.0000
CASE NO. OF MIN. VAL. =  233
CASE NO. OF MAX. VAL. =  284
```

```
                                                           Q1 =   2.0640000
                          VALUE    VALUE/S.E.              Q3 =   6.2400000
SKEWNESS                  2.54        26.50                S- =  -0.5023362
KURTOSIS                  7.40        38.60                S+ =  11.6711325

                          EACH '.' BELOW =    0.3000
```

```
S      Q      Q       S
- M    1   P  M 3     +                                                  M
--I........E..E...........................................................A
  N        C  A                                                           X
           I  N
```

VALUE	COUNT	PERCENTS CELL	PERCENTS CUM	VALUE	COUNT	PERCENTS CELL	PERCENTS CUM	VALUE	COUNT	PERCENTS CELL	PERCENTS CUM	VALUE	COUNT	PERCENTS CELL	PERCENTS CUM
0.1500	1	0.2	0.2	2.0640	2	0.3	25.3	3.5200	4	0.6	49.6	7.2540	1	0.2	78.3
0.1810	1	0.2	0.3	2.0650	1	0.2	25.4	3.5340	1	0.2	49.8	7.2700	2	0.3	78.6
0.2100	1	0.2	0.5	2.0700	1	0.2	25.6	3.5880	1	0.2	49.9	7.3160	2	0.3	78.9
0.2460	1	0.2	0.6	2.0720	1	0.2	25.7	3.5940	16	2.5	52.4	7.3530	1	0.2	79.0
0.2660	1	0.2	0.8	2.0730	1	0.2	25.9	3.5960	1	0.2	52.5	7.5880	1	0.2	79.2
0.2850	1	0.2	0.9	2.0760	1	0.2	26.0	3.6000	1	0.2	52.7	7.6800	1	0.2	79.3
0.3000	1	0.2	1.1	2.0800	1	0.2	26.2	3.6080	1	0.2	52.8	7.7400	2	0.3	79.6
0.5760	1	0.2	1.2	2.0820	1	0.2	26.3	3.6350	8	1.2	54.1	7.7440	2	0.3	79.9
0.5880	1	0.2	1.4	2.0880	1	0.2	26.5	3.6580	1	0.2	54.2	7.8910	1	0.2	80.1
0.6000	1	0.2	1.5	2.0900	1	0.2	26.6	3.7170	3	0.5	54.7	7.9840	1	0.2	80.2
0.6510	2	0.3	1.8	2.1000	3	0.5	27.1	3.7200	2	0.3	55.0	7.9850	1	0.2	80.4
0.6570	1	0.2	2.0	2.1020	1	0.2	27.3	3.7840	1	0.2	55.1	7.9980	1	0.2	80.6
0.6780	1	0.2	2.1	2.1060	1	0.2	27.4	3.7940	1	0.2	55.3	8.0000	1	0.2	80.7
0.7170	2	0.3	2.5	2.1120	1	0.2	27.6	3.7960	1	0.2	55.4	8.1220	1	0.2	80.9
0.7200	2	0.3	2.8	2.1160	1	0.2	27.7	3.8000	1	0.2	55.6	8.1840	1	0.2	81.0
0.7320	1	0.2	2.9	2.1210	1	0.2	27.9	3.8270	1	0.2	55.7	8.2460	1	0.2	81.2
0.7420	1	0.2	3.1	2.1240	2	0.3	28.2	3.8500	1	0.2	55.9	8.2600	3	0.5	81.6
0.7440	1	0.2	3.2	2.1340	1	0.2	28.3	3.8720	2	0.3	56.2	8.4280	2	0.3	81.9
0.7500	1	0.2	3.4	2.1400	1	0.2	28.5	3.8880	1	0.2	56.4	8.4320	1	0.2	82.1
0.7830	1	0.2	3.5	2.1500	1	0.2	28.6	3.9000	1	0.2	56.5	8.4670	1	0.2	82.2

****
* EFRC *
****

VARIABLE NUMBER	1
NUMBER OF DISTINCT VALUES .	495
NUMBER OF VALUES COUNTED. .	653
NUMBER OF VALUES NOT COUNTED	0

MAXIMUM	352973.0000000
MINIMUM	15.1300000
RANGE	352957.8700011
VARIANCE	****************
ST.DEV.	14592.9250832
(Q3-Q1)/2	856.9000000
MX.ST.SC.	22.62
MN.ST.SC.	-0.20

	ESTIMATE	ST.ERROR	95% CONFIDENCE LOWER	95% CONFIDENCE UPPER
MEAN	2883.7180245	571.0652877	1762.3690291	4005.0670199
MEDIAN	570.0000000	50.1659483		
MODE	362.0000000			

EACH '+' ABOVE = 1500C.0000
L= 0.0000
U= 420000.0000
CASE NO. OF MIN. VAL. = 633
CASE NO. OF MAX. VAL. = 647

	VALUE	VALUE/S.E.
SKEWNESS	18.43	192.29
KURTOSIS	400.59	2091.65

Q1= 277.2000000
Q3= 1951.0000000
S=**************
S*=17476.6431077

EACH '.' BELOW = 3000.0000

S GQ S
- PN +
----IE----...A
RA X
N

VALUE	COUNT	PERCENTS CELL	PERCENTS CUM	VALUE	COUNT	PERCENTS CELL	PERCENTS CUM	VALUE	COUNT	PERCENTS CELL	PERCENTS CUM	VALUE	COUNT	PERCENTS CELL	PERCENTS CUM
15.12	1	0.2	0.2	281.88	1	0.2	25.4	678.60	1	0.2	53.0	2254.62	1	0.2	77.8
29.94	1	0.2	0.3	283.41	2	0.3	25.7	680.64	2	0.3	53.3	2382.24	1	0.2	77.9
30.00	2	0.3	0.6	286.25	1	0.2	25.9	692.78	2	0.3	53.6	2400.00	1	0.2	78.1
39.45	2	0.3	0.9	286.30	1	0.2	26.0	694.82	1	0.2	53.8	2408.00	1	0.2	78.3
40.32	1	0.2	1.1	287.10	1	0.2	26.2	703.00	1	0.2	53.9	2438.96	1	0.2	78.4
46.02	1	0.2	1.2	288.64	1	0.2	26.3	709.00	4	0.6	54.5	2443.50	1	0.2	78.6
57.50	1	0.2	1.4	292.32	1	0.2	26.5	714.00	1	0.2	54.7	2456.00	1	0.2	78.7
60.00	2	0.3	1.7	297.54	1	0.2	26.6	722.50	1	0.2	54.8	2500.00	1	0.2	78.9
62.50	1	0.2	1.8	297.60	1	0.2	26.8	724.00	5	0.8	55.6	2506.00	1	0.2	79.0
74.88	1	0.2	2.0	298.75	1	0.2	27.0	737.36	1	0.2	55.7	2534.00	1	0.2	79.2
76.80	3	0.5	2.5	303.68	1	0.2	27.1	737.63	1	0.2	55.9	2534.83	1	0.2	79.3
77.50	1	0.2	2.6	305.28	1	0.2	27.3	738.00	3	0.5	56.4	2596.08	1	0.2	79.5
78.08	1	0.2	2.8	306.84	1	0.2	27.4	741.24	1	0.2	56.5	2600.00	1	0.2	79.6
78.60	1	0.2	2.9	311.64	1	0.2	27.6	746.46	1	0.2	56.7	2609.28	1	0.2	79.8
80.00	1	0.2	3.1	313.20	1	0.2	27.7	751.54	1	0.2	56.8	2637.00	1	0.2	79.9
80.10	1	0.2	3.2	313.80	1	0.2	27.9	765.00	1	0.2	57.0	2670.00	1	0.2	80.1
82.40	1	0.2	3.4	314.50	4	0.6	28.5	765.72	1	0.2	57.1	2694.20	1	0.2	80.2
82.50	1	0.2	3.5	319.00	1	0.2	28.6	769.98	1	0.2	57.3	2713.00	1	0.2	80.4
83.75	1	0.2	3.7	320.00	1	0.2	28.8	778.80	1	0.2	57.4	2715.00	2	0.3	80.7

PAGE 3 BHOP28 PRICE & WEIGHT & CUBE

CECOM WEIGHT

BULK LINES

```
************
* EWGT     *
************

VARIABLE NUMBER . . . . . . .        2
NUMBER OF DISTINCT VALUES .         13
NUMBER OF VALUES COUNTED. .         14
NUMBER OF VALUES NOT COUNTED         0

                MAXIMUM       26250.0000000
                MINIMUM         507.5000000
                RANGE         25742.5000000
                VARIANCE   43914906.2636719
                ST.DEV.        6626.0323326
                (Q3-Q1)/2      1729.7500000
                MX.ST.SC.         3.35
                MN.ST.SC.        -0.53

              ESTIMATE       ST.ERROR          95% CONFIDENCE
                                            LOWER           UPPER
MEAN        4020.2457143   1771.0954391   202.0537353    7854.4376932
MEDIAN      2450.5000000    990.6720930
MODE         800.0000000
```

```
 H
 H                          EACH "H"
 H                         REPRESENTS
 H                             1
 HH                         COUNT(S)
 HH
 HH
 HHH         H
L-----------U

EACH "-" ABOVE =        2500.0000
              L=           0.0000
              U=       27500.0000
CASE NO. OF MIN. VAL. =     4
CASE NO. OF MAX. VAL. =     8

              VALUE    VALUE/S.E.        Q1=   800.0000000
SKEWNESS       2.64         4.04         Q3=  4259.5000000
KURTOSIS       6.06         4.63         S-=-2598.5066183
                                         S+=10655.0780469

EACH "." BELOW =        250.0000
```

```
S         Q      M     Q                      S
-        MM      E     M3                     +
---------EB.....E.....E.................................................M
         MO      D     A                                                 A
         E       I     N                                                 X
```

VALUE	COUNT	PERCENTS CELL	PERCENTS CUM	VALUE	COUNT	PERCENTS CELL	PERCENTS CUM	VALUE	COUNT	PERCENTS CELL	PERCENTS CUM	VALUE	COUNT	PERCENTS CELL	PERCENTS CUM
507.5	1	7.1	7.1	1850.0	1	7.1	42.9	2772.0	1	7.1	71.4	26250.0	1	7.1	100.0
567.0	1	7.1	14.3	2401.0	1	7.1	50.0	4259.5	1	7.1	78.6				
800.0	2	14.3	28.6	2500.0	1	7.1	57.1	4354.0	1	7.1	85.7				
900.0	1	7.1	35.7	2765.0	1	7.1	64.3	6369.4	1	7.1	92.9				

CECOM CUBE

BULK LINES

PAGE 4 BMDP2D PRICE & WEIGHT & CUBE

```
************
* ECUB     *
************
```

VARIABLE NUMBER	3
NUMBER OF DISTINCT VALUES .	14
NUMBER OF VALUES COUNTED. .	14
NUMBER OF VALUES NOT COUNTED	0

MAXIMUM	465.0000000
MINIMUM	38.7000000
RANGE	426.3000000
VARIANCE	12058.0613998
ST.DEV.	109.8092045
(Q3-Q1)/2	14.5890000
MX.ST.SC.	3.30
MN.ST.SC.	-0.58

	ESTIMATE	ST.ERROR	95% CONFIDENCE LOWER	95% CONFIDENCE UPPER
MEAN	102.3665000	29.3477444	38.9650019	165.7679981
MEDIAN	70.2270000	8.4229670		
MODE	NOT UNIQUE			

```
H
H
H
H
H
H
HH
HH
HH H     H
L-----------U
```

EACH "H" REPRESENTS 1 COUNT(S)

EACH "-" ABOVE =	50.0000
L=	0.0000
U=	550.0000
CASE NO. OF MIN. VAL. =	1
CASE NO. OF MAX. VAL. =	8

	VALUE	VALUE/S.E.
SKEWNESS	2.55	3.89
KURTOSIS	5.54	4.23

Q1=	57.5040000
Q3=	86.6820000
S-=	-7.4427045
S+=	212.1757045

EACH "." BELOW = 5.0000

```
S        Q     Q                          S
-      M 1 M 3 M                          +
.......E.....E.....E.....................................................M
       N     D     A                                                     A
             I     N                                                     X
```

VALUE	COUNT	PERCENTS CELL	PERCENTS CUM
38.70	1	7.1	7.1
42.53	1	7.1	14.3
48.90	1	7.1	21.4
57.50	1	7.1	28.6
59.89	1	7.1	35.7
64.98	1	7.1	42.9
65.00	1	7.1	50.0
75.45	1	7.1	57.1
77.13	1	7.1	64.3
82.66	1	7.1	71.4
86.68	1	7.1	78.6
88.92	1	7.1	85.7
179.70	1	7.1	92.9
465.00	1	7.1	100.0

NUMBER OF INTEGER WORDS OF STORAGE USED IN PRECEDING PROBLEM 606
CPU TIME USED IN PRECEDING PROBLEM 12.467 SECONDS
CUMULATIVE CPU TIME USED 12.467 SECONDS

CECOM PRICE

BULK LINES

```
PAGE   2  ONBP20 PRICE & WEIGHT & CUBE

 ************
  * EPMC    *
 ************
                                          MAXIMUM       106350.0000000
                                          MINIMUM         1125.0000000
                                          RANGE         105225.0000000
VARIABLE NUMBER . . . . . .        1      VARIANCE ****************
NUMBER OF DISTINCT VALUES .       14      ST.DEV.        26673.7054000
NUMBER OF VALUES COUNTED. .       14      (Q3-Q1)/2       7336.0300000
NUMBER OF VALUES NOT COUNTED       0      MX.ST.SC.          3.39
                                          MN.ST.SC.         -0.56

                                               95% CONFIDENCE
               ESTIMATE        ST.ERROR      LOWER          UPPER
MEAN        15996.6020572   7120.0690146  595.8067440  31397.5509703
MEDIAN       9695.2400000   4235.4600701
MODE          NOT UNIQUE
```

```
                                    H
                                    H             EACH "H"
                                    H            REPRESENTS
                                    HH                1
                                    HH            COUNT(S)
                                    HH
                                    HH
                                    HH        H
                                    L-----------U

                            EACH "-" ABOVE =   10000.0000
                                         L=        0.0000
                                         U=   110000.0000
                   CASE NO. OF MIN. VAL. =     1
                   CASE NO. OF MAX. VAL. =     8

                                                Q1= 2505.0000000
                         VALUE   VALUE/S.E.     Q3=17257.0599999
           SKEWNESS       2.73        4.16      S-=**************
           KURTOSIS       6.43        4.91      S+=42670.4602651

                            EACH "." BELOW =    1000.0000
```

```
S         Q      M      Q                S
-         M1     E      M3               +
----------I------E------E-------------------------------------------------M
          N      D      A                                                 A
                 I      N                                                 X
```

VALUE	COUNT	PERCENTS CELL	PERCENTS CUM	VALUE	COUNT	PERCENTS CELL	PERCENTS CUM	VALUE	COUNT	PERCENTS CELL	PERCENTS CUM	VALUE	COUNT	PERCENTS CELL	PERCENTS CUM
1125.	1	7.1	7.1	5792.	1	7.1	35.7	11202.	1	7.1	64.3	18100.	1	7.1	92.9
1491.	1	7.1	14.3	8326.	1	7.1	42.9	12372.	1	7.1	71.4	106350.	1	7.1	100.0
2323.	1	7.1	21.4	9663.	1	7.1	50.0	17257.	1	7.1	78.6				
2505.	1	7.1	28.6	9727.	1	7.1	57.1	17640.	1	7.1	85.7				

MICOM WEIGHT

BIN LINES

* ENGT *

VARIABLE NUMBER	2
NUMBER OF DISTINCT VALUES	429
NUMBER OF VALUES COUNTED	1603
NUMBER OF VALUES NOT COUNTED	9

MAXIMUM	70.0000000
MINIMUM	0.0100000
RANGE	69.9900000
VARIANCE	38.7842400
ST.DEV.	6.2276994
(Q3-Q1)/2	1.2400000
MX.ST.SC.	10.70
MN.ST.SC.	-0.54

	ESTIMATE	ST.ERROR	95% CONFIDENCE LOWER	95% CONFIDENCE UPPER
MEAN	3.3559958	0.1555467	3.0508985	3.6610915
MEDIAN	1.4000000	0.0692821		
MODE	1.5000000			

```
M
M
M
M                                                    EACH 'M'
M                                                   REPRESENTS
M                                                       114
M                                                    COUNT(S)
M
MM
MMMMMMMMMMMMMMMM MM     M M MMM
L--------------------------------U
```

EACH '-' ABOVE = 2.5000
L= 0.0000
U= 80.0000
CASE NO. OF MIN. VAL. = 669
CASE NO. OF MAX. VAL. = 471

	VALUE	VALUE/S.E.
SKEWNESS	5.39	88.16
KURTOSIS	41.66	340.44

Q1= 0.6300000
Q3= 3.1100000
S-= -2.8717044
S+= 9.5836944

EACH '.' BELOW = 0.7500

```
S    0  0        S
-   MIN M        +
----I.E.E-----------------------------------------------------------------------M
    N D A                                                                     A
    I N                                                                       X
```

VALUE	COUNT	PERCENTS CELL	PERCENTS CUM	VALUE	COUNT	PERCENTS CELL	PERCENTS CUM	VALUE	COUNT	PERCENTS CELL	PERCENTS CUM	VALUE	COUNT	PERCENTS CELL	PERCENTS CUM
0.010000	17	1.1	1.1	1.190000	1	0.1	43.5	3.110000	2	0.1	75.1	8.390000	1	0.1	89.0
0.020000	13	0.8	1.9	1.200000	16	1.0	44.5	3.120000	2	0.1	75.2	8.430000	1	0.1	89.0
0.030000	11	0.7	2.6	1.210000	1	0.1	44.5	3.250000	2	0.1	75.4	8.580000	6	0.4	89.4
0.040000	15	0.9	3.4	1.220000	1	0.1	44.6	3.260000	1	0.1	75.4	8.520000	1	0.1	89.5
0.050000	1	0.1	3.4	1.230000	5	0.3	44.9	3.300000	11	0.7	76.1	8.550000	1	0.1	89.5
0.060000	11	0.7	4.1	1.240000	8	0.5	45.4	3.330000	1	0.1	76.2	8.670000	2	0.1	89.6
0.070000	3	0.2	4.3	1.250000	29	1.8	47.2	3.360000	1	0.1	76.2	8.750000	2	0.1	89.8
0.080000	13	0.8	5.1	1.260000	10	0.6	47.8	3.380000	2	0.1	76.4	8.900000	1	0.1	89.8
0.090000	3	0.2	5.3	1.280000	2	0.1	48.0	3.390000	2	0.1	76.5	8.950000	1	0.1	89.9
0.100000	14	0.9	6.2	1.290000	5	0.3	48.3	3.400000	2	0.1	76.6	9.000000	11	0.7	90.6
0.110000	4	0.2	6.4	1.300000	4	0.2	48.5	3.450000	1	0.1	76.7	9.070000	1	0.1	90.6
0.120000	16	1.0	7.4	1.310000	4	0.2	48.8	3.500000	9	0.6	77.2	9.100000	1	0.1	90.7
0.130000	5	0.3	7.7	1.320000	5	0.3	49.1	3.560000	1	0.1	77.3	9.140000	1	0.1	90.8
0.140000	3	0.2	7.9	1.330000	1	0.1	49.2	3.600000	3	0.2	77.5	9.170000	1	0.1	90.8
0.150000	13	0.8	8.7	1.340000	2	0.1	49.3	3.680000	2	0.1	77.6	9.500000	1	0.1	90.9
0.160000	6	0.4	9.1	1.350000	5	0.3	49.6	3.700000	4	0.2	77.9	9.700000	1	0.1	91.0
0.170000	7	0.4	9.5	1.360000	1	0.1	49.7	3.720000	1	0.1	77.9	9.750000	3	0.2	91.1
0.180000	6	0.4	9.9	1.370000	1	0.1	49.7	3.740000	1	0.1	78.0	9.780000	1	0.1	91.2
0.190000	2	0.1	10.0	1.380000	1	0.1	49.8	3.750000	3	0.2	78.2	9.900000	3	0.2	91.4

MICOM CUBE

BIN LINES

PAGE 4 BHOP20 PRICE & WEIGHT & CUBE

```
************
* ECUB     *
************
```

VARIABLE NUMBER	3
NUMBER OF DISTINCT VALUES .	475
NUMBER OF VALUES COUNTED. .	1603
NUMBER OF VALUES NOT COUNTED	9

MAXIMUM	2.0000000
MINIMUM	0.0010000
RANGE	1.9990000
VARIANCE	0.1207325
ST.DEV.	0.3474731
(Q3-Q1)/2	0.1065000
MX.ST.SC.	5.05
MN.ST.SC.	-0.70

	ESTIMATE	ST.ERROR	95% CONFIDENCE LOWER	95% CONFIDENCE UPPER
MEAN	0.2447442	0.0086787	0.2277214	0.2617670
MEDIAN	0.1230000	0.0025981		
MODE	0.1020000			

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L-----------------------------U
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EACH "H" REPRESENTS 63 COUNT(S)

EACH "-" ABOVE = 0.0750
L= 0.0000
U= 2.4000

CASE NO. OF MIN. VAL. = 669
CASE NO. OF MAX. VAL. = 615

	VALUE	VALUE/S.E.		
			Q1=	0.0420000
			Q3=	0.2550000
SKEWNESS	2.54	41.54	S-=	-0.1027208
KURTOSES	6.81	55.62	S+=	0.5922173

EACH "." BELOW = 0.0200

```
S    Q          Q          S
-   M1   M  M  M3          +
-----I----E--D--E-------------------------------------M
    M    D  O  A                                      A
         I  E  N                                      X
```

VALUE	COUNT	PERCENTS CELL	PERCENTS CUM	VALUE	COUNT	PERCENTS CELL	PERCENTS CUM	VALUE	COUNT	PERCENTS CELL	PERCENTS CUM	VALUE	COUNT	PERCENTS CELL	PERCENTS CUM
0.0010000	9	0.6	0.6	0.1200000	2	0.1	52.0	0.2870000	1	0.1	77.0	0.6790000	3	0.2	90.2
0.0020000	17	1.1	1.6	0.1290000	8	0.5	52.5	0.2880000	2	0.1	77.1	0.6800000	1	0.1	90.3
0.0030000	8	0.5	2.1	0.1300000	3	0.2	52.7	0.2900000	2	0.1	77.2	0.6880000	1	0.1	90.3
0.0040000	27	1.7	3.8	0.1320000	11	0.7	53.3	0.2910000	1	0.1	77.3	0.6890000	1	0.1	90.4
0.0050000	7	0.4	4.2	0.1340000	4	0.2	53.6	0.2920000	2	0.1	77.4	0.6910000	2	0.1	90.5
0.0060000	19	1.2	5.4	0.1350000	1	0.1	53.6	0.2940000	1	0.1	77.5	0.6950000	2	0.1	90.6
0.0070000	6	0.4	5.8	0.1360000	1	0.1	53.7	0.2960000	3	0.2	77.7	0.6960000	1	0.1	90.7
0.0080000	20	1.2	7.0	0.1370000	7	0.4	54.1	0.3000000	4	0.2	77.9	0.7020000	1	0.1	90.8
0.0090000	7	0.4	7.5	0.1390000	2	0.1	54.3	0.3020000	1	0.1	78.0	0.7080000	1	0.1	90.8
0.0100000	18	1.1	8.6	0.1400000	14	0.9	55.1	0.3030000	1	0.1	78.0	0.7120000	1	0.1	90.9
0.0110000	17	1.1	9.7	0.1410000	9	0.6	55.7	0.3040000	1	0.1	78.1	0.7170000	2	0.1	91.0
0.0120000	16	1.0	10.7	0.1420000	3	0.2	55.9	0.3060000	1	0.1	78.2	0.7200000	1	0.1	91.1
0.0130000	13	0.8	11.5	0.1430000	1	0.1	56.0	0.3080000	1	0.1	78.2	0.7260000	2	0.1	91.2
0.0140000	13	0.8	12.3	0.1440000	16	1.0	57.0	0.3120000	2	0.1	78.4	0.7300000	1	0.1	91.3
0.0150000	11	0.7	13.0	0.1450000	7	0.4	57.4	0.3150000	1	0.1	78.4	0.7470000	1	0.1	91.3
0.0160000	9	0.6	13.5	0.1460000	1	0.1	57.5	0.3180000	2	0.1	78.5	0.7520000	1	0.1	91.4
0.0170000	6	0.4	13.9	0.1470000	1	0.1	57.5	0.3200000	1	0.1	78.6	0.7580000	1	0.1	91.5
0.0180000	6	0.4	14.3	0.1480000	2	0.1	57.6	0.3240000	2	0.1	78.7	0.7650000	1	0.1	91.5
0.0190000	4	0.2	14.5	0.1500000	2	0.1	57.8	0.3260000	1	0.1	78.8	0.7680000	1	0.1	91.6

PAGE 2 SHOP28 PRICE & WEIGHT & CUBE

EPRC

VARIABLE NUMBER	1
NUMBER OF DISTINCT VALUES	1096
NUMBER OF VALUES COUNTED	1609
NUMBER OF VALUES NOT COUNTED	3

MAXIMUM	45350.0000000
MINIMUM	0.0500000
RANGE	45349.9499998
VARIANCE	10107554.0681763
ST.DEV.	3179.2379697
(Q3-Q1)/2	601.5600000
PX.ST.SC.	13.82
MN.ST.SC.	-0.44

	ESTIMATE	ST.ERROR	95% CONFIDENCE LOWER	95% CONFIDENCE UPPER
MEAN	1404.0738223	79.2583477	1248.6132981	1559.5343464
MEDIAN	356.0000000	18.7630925		
MODE	2300.0000000			

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H
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H                                        EACH "H"
H                                        REPRESENTS
H                                          124
H                                        COUNT(S)
H
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HH
HHHHHHHHHHHHHHH HHH HH  H      H
L-----------------------------------U
```

EACH "-" ABOVE = 1500.0000
L= 0.0000
U= 40000.0000
CASE NO. OF MIN. VAL. = 26
CASE NO. OF MAX. VAL. = 1431

	VALUE	VALUE/S.E.
SKEWNESS	5.90	96.57
KURTOSIS	49.68	406.81

Q1= 110.0000000
Q3= 1314.0000000
S-=-1775.1641475
S+= 4503.3117920

EACH "_" BELOW = 500.0000

```
S   A A     S
-   HH H H   +
----IE-E-O-----------------------------------------------------------------N
    ND A D                                                               A
     I N E                                                               X
```

VALUE	COUNT	PERCENTS CELL	PERCENTS CUM	VALUE	COUNT	PERCENTS CELL	PERCENTS CUM	VALUE	COUNT	PERCENTS CELL	PERCENTS CUM	VALUE	COUNT	PERCENTS CELL	PERCENTS CUM
.50000E-01	1	0.1	0.1	79.960	1	0.1	20.0	360.00	1	0.1	50.3	1374.0	1	0.1	75.5
0.10000	1	0.1	0.1	80.260	1	0.1	20.0	360.36	1	0.1	50.4	1383.0	1	0.1	75.5
0.20000	1	0.1	0.2	80.600	1	0.1	20.9	361.00	1	0.1	50.5	1388.0	1	0.1	75.6
0.50000	1	0.1	0.2	80.760	1	0.1	20.9	362.00	1	0.1	50.5	1391.0	7	0.4	76.0
0.81000	1	0.1	0.3	81.260	1	0.1	21.0	363.00	1	0.1	50.6	1395.0	1	0.1	76.1
0.84000	1	0.1	0.4	82.000	1	0.1	21.1	366.00	2	0.1	50.7	1400.0	1	0.1	76.1
1.3000	3	0.2	0.6	82.320	1	0.1	21.1	369.00	1	0.1	50.8	1404.0	1	0.1	76.2
1.6000	1	0.1	0.6	82.330	1	0.1	21.2	373.12	1	0.1	50.8	1406.0	1	0.1	76.3
1.6200	1	0.1	0.7	82.520	1	0.1	21.3	375.00	1	0.1	50.9	1410.0	1	0.1	76.3
1.7000	1	0.1	0.7	83.500	1	0.1	21.3	376.00	4	0.2	51.1	1415.0	1	0.1	76.4
1.9700	2	0.1	0.9	85.130	1	0.1	21.4	378.00	1	0.1	51.2	1429.0	1	0.1	76.4
1.9900	1	0.1	0.9	85.300	1	0.1	21.4	380.00	3	0.2	51.4	1430.0	1	0.1	76.5
2.0300	1	0.1	1.0	88.950	1	0.1	21.5	383.00	1	0.1	51.5	1470.0	1	0.1	76.6
2.2000	2	0.1	1.1	89.550	3	0.2	21.7	385.00	1	0.1	51.5	1474.0	1	0.1	76.6
2.2600	1	0.1	1.2	90.000	2	0.1	21.8	386.00	1	0.1	51.6	1476.0	1	0.1	76.7
2.4600	1	0.1	1.2	90.480	1	0.1	21.9	386.92	1	0.1	51.6	1483.0	1	0.1	76.8
2.5200	1	0.1	1.3	90.970	1	0.1	21.9	388.00	1	0.1	51.7	1491.0	1	0.1	76.8
2.5600	2	0.1	1.4	91.850	1	0.1	22.0	391.00	2	0.1	51.8	1493.0	1	0.1	76.9
2.5900	3	0.2	1.6	92.390	1	0.1	22.1	392.00	2	0.1	52.0	1499.0	1	0.1	76.9

* ENGT *

VARIABLE NUMBER 2
NUMBER OF DISTINCT VALUES . 157
NUMBER OF VALUES COUNTED. . 241
NUMBER OF VALUES NOT COUNTED 1

MAXIMUM	1501.0000000
MINIMUM	1.4000000
RANGE	1499.6000000
VARIANCE	136?7.?385604
ST.DEV.	136.5197369
C03-01?72	5?.?000000
MX.ST.SC.	12.?3
MN.ST.SC.	-1.05

	ESTIMATE	ST.ERROR	95% CONFIDENCE LOWER	95% CONFIDENCE UPPER
MEAN	89.2622500	8.8123111	71.9025309	106.6219691
MEDIAN	57.5000000	1.2290347		
MODE	57.5000000			

EACH "H" REPRESENTS 1? COUNT(S)

EACH "-" ABOVE = 100.0000
L= 0.0000
U= 2?00.0000
CASE NO. OF MIN. VAL. = 179
CASE NO. OF MAX. VAL. = 43

	VALUE	VALUE/S.E.
SKEWNESS	8.62	5?.?0
KURTOSIS	100.?0	51?.76

?1= 31.2600000
?3= 105.0600000
<-= -47.2574969
5+= 225.7419969

EACH "." BELOW = 15.0000

VALUE	COUNT	PERCENTS CELL	PERCENTS CUM	VALUE	COUNT	PERCENTS CELL	PERCENTS CUM	VALUE	COUNT	PERCENTS CELL	PERCENTS CUM	VALUE	COUNT	PERCENTS CELL	PERCENTS CUM
0.4000	1	0.4	0.4	29.2500	1	0.4	21.3	65.9800	1	0.4	57.5	120.0000	1	0.4	80.0
2.4600	1	0.4	0.4	29.3900	1	0.4	21.7	67.7300	2	0.8	58.3	122.7500	1	0.4	80.4
3.4000	1	0.4	1.3	30.0000	3	1.3	22.9	69.9800	2	0.8	59.2	127.3100	1	0.4	80.8
4.5000	1	0.4	1.7	30.0600	1	0.4	23.3	70.0000	1	0.4	59.6	130.0000	7	2.9	83.6
4.5500	1	0.4	2.1	30.5500	1	0.4	23.9	71.0000	1	0.4	60.0	130.9200	1	0.4	84.2
4.7000	1	0.4	2.5	31.0000	2	0.8	24.6	71.5000	1	0.4	60.4	132.2500	1	0.4	84.6
4.7500	1	0.4	2.9	31.2600	3	1.3	25.4	72.0000	3	1.3	61.7	134.4400	1	0.4	85.0
5.0000	1	0.4	3.3	31.5000	1	0.4	26.3	73.2000	1	0.4	62.1	135.4600	1	0.4	85.4
6.5000	1	0.4	3.8	31.8000	1	0.4	26.7	74.0000	1	0.4	62.5	139.9600	1	0.4	85.8
6.9700	1	0.4	4.2	32.0000	1	0.4	27.1	76.5000	2	0.8	63.3	141.0000	1	0.4	86.3
7.5000	2	0.8	5.0	33.8000	1	0.4	27.5	76.7800	1	0.4	63.6	142.0000	4	1.7	87.9
7.9800	1	0.4	5.4	33.8700	1	0.4	27.9	77.0000	1	0.4	64.2	156.0000	1	0.4	88.3
10.7500	2	0.8	6.3	37.1000	1	0.4	28.3	79.0000	5	2.1	66.3	160.0000	2	0.8	89.2
11.2500	1	0.4	6.7	37.9700	1	0.4	24.4	78.1800	1	0.4	66.7	169.5700	1	0.4	89.6
12.2400	1	0.4	7.1	39.0000	2	0.8	29.0	79.5200	1	0.4	67.1	175.0000	1	0.4	90.0
12.9500	1	0.4	7.5	39.3600	1	0.4	30.0	83.0000	2	0.8	67.9	182.0000	1	0.4	90.4
13.0000	1	0.4	7.9	39.5500	1	0.4	30.4	84.0000	1	0.4	68.3	189.4400	1	0.4	90.8
14.9400	1	0.4	8.3	40.5000	1	0.4	30.8	85.2000	1	0.4	68.8	194.0000	1	0.4	91.3
16.0000	2	0.8	9.2	41.3100	1	0.4	31.3	85.2200	1	0.4	69.2	195.0000	2	0.9	92.1
16.5000	1	0.4	9.6	41.5000	8	3.3	34.5	87.3500	1	0.4	69.6	196.0000	1	0.4	92.5

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*************
* ECU9      *
*************
```

VARIABLE NUMBER	3
NUMBER OF DISTINCT VALUES .	155
NUMBER OF VALUES COUNTED. .	240
NUMBER OF VALUES NOT COUNTED	0

MAXIMUM	39.7800000
MINIMUM	2.0010000
RANGE	37.9790000
VARIANCE	45.4241337
ST.DEV.	6.7397429
(Q3-Q1)/2	3.2020000
MX.ST.SC.	4.79
MN.ST.SC.	-0.30

	ESTIMATE	ST.ERROR	95% CONFIDENCE LOWER	UPPER
MEAN	7.3656475	0.4330495	6.5043644	8.2227065
MEDIAN	4.4930000	0.2654699		
MODE	3.8840000			

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H
H
H
H                        EACH 'H'
H                        REPRESENTS
H                           11
HH                       COUNT(S)
HH
HHHHH
HHHHHHHHHHHHHH HH H
L----------------------U
```

EACH '-' ABOVE = 2.0000
L= 0.0000
U= 46.0000
CASE NO. OF MIN. VAL. = 159
CASE NO. OF MAX. VAL. = 40

	VALUE	VALUE/S.E.		
SKEWNESS	2.31	14.60	Q1=	3.2740000
KURTOSIS	6.01	19.01	Q3=	9.6780000
			S-=	0.6259446
			S+=	14.1054304

EACH '.' BELOW = 0.5000

```
S   Q         Q
- M I MM    M  3    +                                                M
...I...QI.....E...............................................................A
   N   D)     A                                                      X
       :I     N
```

VALUE	COUNT	PERCENTS CELL	CUM	VALUE	COUNT	PERCENTS CELL	CUM	VALUE	COUNT	PERCENTS CELL	CUM	VALUE	COUNT	PERCENTS CELL	CUM
2.001	1	0.4	0.4	3.274	8	3.3	27.5	5.149	1	0.4	59.2	11.724	1	0.4	82.5
2.007	1	0.4	0.8	3.277	2	0.8	28.3	5.253	3	1.3	60.4	11.758	1	0.4	82.9
2.026	1	0.4	1.3	3.311	1	0.4	28.8	5.342	2	0.8	61.3	11.921	1	0.4	83.3
2.032	1	0.4	1.7	3.315	1	0.4	29.2	5.344	2	0.8	62.1	12.023	2	0.8	84.2
2.115	1	0.4	2.1	3.460	1	0.4	29.6	5.426	1	0.4	62.5	12.561	1	0.4	84.6
2.120	1	0.4	2.5	3.564	1	0.4	30.0	5.591	1	0.4	62.9	12.927	1	0.4	85.0
2.166	1	0.4	2.9	3.630	1	0.4	30.4	6.126	1	0.4	63.3	13.592	1	0.4	85.4
2.224	1	0.4	3.3	3.650	1	0.4	30.8	6.143	1	0.4	63.8	13.667	3	1.3	86.7
2.230	1	0.4	3.8	3.697	1	0.4	31.3	6.315	1	0.4	64.2	13.714	1	0.4	87.1
2.244	1	0.4	4.2	3.707	1	0.4	31.7	6.548	2	0.8	65.0	13.750	1	0.4	87.5
2.269	1	0.4	4.6	3.757	1	0.4	32.1	6.818	1	0.4	65.4	14.053	1	0.4	87.9
2.314	1	0.4	5.0	3.846	1	0.4	32.5	6.875	1	0.4	65.8	14.179	1	0.4	88.3
2.315	1	0.4	5.4	3.884	29	12.1	44.6	6.920	1	0.4	66.3	14.411	1	0.4	88.8
2.334	1	0.4	5.8	3.930	1	0.4	45.0	7.029	4	1.7	67.9	14.769	1	0.4	89.2
2.341	1	0.4	6.3	4.033	1	0.4	45.4	7.412	1	0.4	68.3	14.824	1	0.4	89.6
2.343	7	2.9	9.2	4.102	1	0.4	45.8	7.451	1	0.4	68.8	14.904	1	0.4	90.0
2.432	1	0.4	9.6	4.212	1	0.4	46.3	7.481	1	0.4	69.2	15.206	1	0.4	90.4
2.467	1	0.4	10.0	4.224	1	0.4	46.7	7.514	1	0.4	69.6	16.044	1	0.4	90.8
2.472	1	0.4	10.4	4.229	1	0.4	47.1	7.660	1	0.4	70.0	16.362	1	0.4	91.3
2.542	3	1.3	11.7	4.236	1	0.4	47.5	7.768	3	1.3	71.3	16.401	1	0.4	91.7

MICOM PRICE

RACK LINES

PAGE 2 BMDP2D PRICE & WEIGHT & CODE

```
************
* CPRC     *
************

VARIABLE NUMBER . . . . . . .        1        MAXIMUM     170592.0000000
NUMBER OF DISTINCT VALUES .        172        MINIMUM         10.8100000
NUMBER OF VALUES COUNTED. .        240        RANGE       170581.1900001
NUMBER OF VALUES NOT COUNTED         0        VARIANCE ****************
                                              ST.DEV.      31596.6622317
                                              (Q3-Q1)/2    11695.0000000
                                              MX.ST.SC.         4.69
                                              MN.ST.SC.        -0.70

                                                      95% CONFIDENCE
            ESTIMATE        ST.ERROR         LOWER           UPPER
MEAN     22265.9673334   2039.5557770   18243.0660087   26283.6646580
MEDIAN    8201.5000000   1362.2585953
MODE     68591.0000000
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H
H
H
H                                   EACH "H"
H                                   REPRESENTS
H                                       12
H                                   COUNT(S)
HH
HHHH      H
HHHHHHHHHHHHHH    HH    H
L----------------------------U

EACH "-" ABOVE =     7500.0000
             L=         0.0000
             U=    172500.0000
CASE NO. OF MIN. VAL. =   16
CASE NO. OF MAX. VAL. =  213

                                       Q1= 2351.0000000
             VALUE   VALUE/S.E.        Q3=25741.0000000
SKEWNESS      2.15      13.63          S-=-9330.7949994
KURTOSIS      4.90      15.17          S+=53462.5295653

EACH "." BELOW =    1500.0000
```

```
S    Q       Q          S
-    M1  M   M 3        +        M                                              M
.....I...E...E..........................O.......................................A
     N   D   A                   D                                              X
         I   N                   E
```

VALUE	COUNT	PERCENTS CELL	CUM	VALUE	COUNT	PERCENTS CELL	CUM	VALUE	COUNT	PERCENTS CELL	CUM	VALUE	COUNT	PERCENTS CELL	CUM
10.81	1	0.4	0.4	1983.00	1	0.4	22.1	6056.00	1	0.4	45.0	16154.00	1	0.4	64.6
26.25	1	0.4	0.8	2060.00	1	0.4	22.5	6349.00	1	0.4	45.4	16156.00	1	0.4	65.0
29.60	1	0.4	1.3	2066.00	1	0.4	22.9	6390.00	1	0.4	45.8	16301.00	2	0.8	65.8
43.24	1	0.4	1.7	2100.00	1	0.4	23.3	6392.00	1	0.4	46.3	16492.00	1	0.4	66.3
43.95	1	0.4	2.1	2156.00	1	0.4	23.8	6427.00	1	0.4	46.7	18343.00	1	0.4	66.7
99.62	1	0.4	2.5	2167.00	1	0.4	24.2	6628.00	1	0.4	47.1	18565.00	1	0.4	67.1
117.00	1	0.4	2.9	2250.00	1	0.4	24.6	6695.00	1	0.4	47.5	19500.00	1	0.4	67.5
154.00	1	0.4	3.3	2296.00	1	0.4	25.0	7035.00	1	0.4	47.9	19958.00	1	0.4	67.9
164.90	1	0.4	3.8	2406.00	1	0.4	25.4	7062.00	1	0.4	48.3	20158.00	1	0.4	68.3
197.00	1	0.4	4.2	2447.00	1	0.4	25.8	7112.00	1	0.4	48.8	20950.00	1	0.4	68.8
207.90	1	0.4	4.6	2555.00	1	0.4	26.3	7230.00	1	0.4	49.2	21057.00	2	0.8	69.6
306.00	1	0.4	5.0	2609.00	1	0.4	26.7	7989.00	1	0.4	49.6	21610.00	1	0.4	70.0
342.78	1	0.4	5.4	2721.00	4	1.7	28.3	8163.00	1	0.4	50.0	22859.00	1	0.4	70.4
402.00	1	0.4	5.8	2933.00	1	0.4	28.8	8240.00	1	0.4	50.4	23279.00	8	3.3	73.8
412.00	1	0.4	6.3	2983.00	1	0.4	29.2	8481.00	1	0.4	50.8	25097.00	1	0.4	74.2
417.60	1	0.4	6.7	2996.00	1	0.4	29.6	9070.00	1	0.4	51.3	25741.00	3	1.3	75.4
464.00	1	0.4	7.1	3212.00	1	0.4	30.0	9552.00	1	0.4	51.7	26135.00	1	0.4	75.8
499.00	1	0.4	7.5	3240.00	1	0.4	30.4	9599.00	2	0.8	52.5	31128.00	1	0.4	76.3
514.17	1	0.4	7.9	3353.00	1	0.4	30.8	9758.00	1	0.4	52.9	31632.00	1	0.4	76.7
573.00	1	0.4	8.3	3424.00	1	0.4	31.3	9997.00	1	0.4	53.3	32602.00	1	0.4	77.1

MICOM WEIGHT

BULK LINES

```
************
* EWGT     *
************

VARIABLE NUMBER . . . . . .        2
NUMBER OF DISTINCT VALUES .       15
NUMBER OF VALUES COUNTED. .       36
NUMBER OF VALUES NOT COUNTED       0
```

MAXIMUM	4600.0000000	
MINIMUM	0.0300000	
RANGE	4679.9700000	
VARIANCE	631727.4563179	
ST.DEV.	794.8120436	
(Q3-Q1)/2	178.8750000	
MX.ST.SC.	5.29	
MN.ST.SC.	-0.60	

	ESTIMATE	ST.ERROR	95% CONFIDENCE LOWER	95% CONFIDENCE UPPER
MEAN	478.9930556	132.4680073	210.0671079	747.9190032
MEDIAN	384.0000000	0.0000000		
MODE	384.0000000			

```
H
H                           EACH 'H'
H                           REPRESENTS
H                               4
H                           COUNT(S)
H
H
HHHH     H
L---------------U
```

```
EACH '-' ABOVE =     500.0000
              L=       0.0000
              U=    7500.0000
CASE NO. OF MIN. VAL. =   19
CASE NO. OF MAX. VAL. =   28
```

	VALUE	VALUE/S.E.
SKEWNESS	4.14	10.15
KURTOSIS	18.84	23.08

```
Q1=   56.2500000
Q3=  414.0000000
S-= -315.8197880
S+= 1273.8058991
```

EACH '.' BELOW = 50.0000

```
S    Q      Q                 S
-    MI     MM                +
-----I------EE.............................................................M
     N      DA                                                              A
            IN                                                              X
```

VALUE	COUNT	PERCENTS CELL	PERCENTS CUM
-30000E-01	7	19.4	19.4
0.60000	1	2.8	22.2
49.500	1	2.8	25.0
63.000	1	2.8	27.8
94.500	1	2.8	30.6
381.22	1	2.8	33.3
384.00	12	33.3	66.7
414.00	5	13.9	80.6
488.00	1	2.8	83.3
494.00	1	2.8	86.1
676.00	1	2.8	88.9
768.00	1	2.8	91.7
1310.7	1	2.8	94.4
1560.0	1	2.8	97.2
4680.0	1	2.8	100.0

MICOM CUBE

BULK LINES

PAGE 4 BMDP2D PRICE & WEIGHT & CUBE

```
************
* ECUB     *
************

VARIABLE NUMBER . . . . . . .         3
NUMBER OF DISTINCT VALUES .          15
NUMBER OF VALUES COUNTED. .          36
NUMBER OF VALUES NOT COUNTED          0
```

MAXIMUM	915.9000000
MINIMUM	40.0960000
RANGE	875.8040000
VARIANCE	21200.6365671
ST.DEV.	145.8780421
(Q3-Q1)/2	5.1302500
MX.ST.SC.	5.70
MN.ST.SC.	-0.30

	ESTIMATE	ST.ERROR	95% CONFIDENCE LOWER	UPPER
MEAN	84.3409167	24.3131403	34.9826229	133.6992105
MEDIAN	53.4380000	2.8446061		
MODE	55.6490000			

```
H
H                      EACH "H"
H                      REPRESENTS
H                          4
H                      COUNT(S)
H
H
HHH         H
L---------------U
```

EACH "-" ABOVE =	75.0000
L=	0.0000
U=	1125.0000
CASE NO. OF MIN. VAL. =	4
CASE NO. OF MAX. VAL. =	20

	VALUE	VALUE/S.E.		
SKEWNESS	5.15	12.61	Q1=	45.3885000
KURTOSIS	26.34	32.26	Q3=	55.6490000
			S-=	-61.5379254
			S+=	230.2197587

EACH "." BELOW = 10.0000

```
S          QQ       S
-          MM  M    +
-----------IE..E.............................................................M
           MD  A                                                              A
           I   N                                                              X
```

VALUE	COUNT	PERCENTS CELL	CUM	VALUE	COUNT	PERCENTS CELL	CUM	VALUE	COUNT	PERCENTS CELL	CUM	VALUE	COUNT	PERCENTS CELL	CUM
40.10	1	2.8	2.8	51.16	1	2.8	47.2	62.92	1	2.8	83.3	154.57	1	2.8	94.4
44.52	1	2.8	5.6	51.23	1	2.8	50.0	65.26	1	2.8	86.1	188.75	1	2.8	97.2
44.98	7	19.4	25.0	55.65	10	27.8	77.8	97.88	1	2.8	88.9	915.90	1	2.8	100.0
45.80	7	19.4	44.4	60.92	1	2.8	80.6	111.30	1	2.8	91.7				

NUMBER OF INTEGER WORDS OF STORAGE USED IN PRECEDING PROBLEM 786
CPU TIME USED IN PRECEDING PROBLEM 12.017 SECONDS
CUMULATIVE CPU TIME USED 12.017 SECONDS

PAGE 2 ONOP20 PRICE & WEIGHT & CUBE

MICOM PRICE

BULK LINES

```
************
* EPRC     *
************

VARIABLE NUMBER . . . . . . .        1      MAXIMUM      413496.0000000
NUMBER OF DISTINCT VALUES .         17      MINIMUM           7.1000000
NUMBER OF VALUES COUNTED. .         36      RANGE        413488.9000015
NUMBER OF VALUES NOT COUNTED         0      VARIANCE  ***************
                                            ST.DEV.      116220.5034090
                                            (Q3-Q1)/2    103286.3650002
                                            MX.ST.SC.         2.49
                                            MN.ST.SC.        -1.07

                                                  95% CONFIDENCE
            ESTIMATE         ST.ERROR           LOWER           UPPER
MEAN     124160.9922773  19370.0839148  84837.6359777  163484.3495770
MEDIAN   176745.0000000  54776.1323290
MODE     206740.0000000
```

```
H
H                    EACH "H"
H     H              REPRESENTS
H     H                 2
H     H              COUNT(S)
H     H H
H     H H
HH    HH H    H
L--------------U
```

```
EACH "-" ABOVE =    30000.0000
              L=        0.0000
              U=   450000.0000
CASE NO. OF MIN. VAL. =  23
CASE NO. OF MAX. VAL. =  18

                                           Q1=  175.2700000
                 VALUE   VALUE/S.E.        Q3=*************
SKEWNESS          0.26      0.65           S-= 7940.4892063
KURTOSIS         -1.15     -1.41           S+=*************

EACH "." BELOW =    5000.0000
```

```
Q S                          Q     S
M -             M     M      M     +                        M
I...............E.....E......O......................................A
N               A     D      D                              X
                N     I      E
```

VALUE	COUNT	PERCENTS CELL	PERCENTS CUM	VALUE	COUNT	PERCENTS CELL	PERCENTS CUM	VALUE	COUNT	PERCENTS CELL	PERCENTS CUM	VALUE	COUNT	PERCENTS CELL	PERCENTS CUM
7.1000	4	11.1	11.1	227.01	1	2.8	30.6	50000.	1	2.8	44.4	.25505E+06	5	13.9	97.2
9.9600	3	8.3	19.4	13007.	1	2.8	33.3	50994.	1	2.8	47.2	.41350E+06	1	2.8	100.0
118.91	1	2.8	22.2	16998.	1	2.8	36.1	.17675E+06	2	5.6	52.8				
151.34	1	2.8	25.0	17233.	1	2.8	38.9	.18753E+06	1	2.8	55.6				
199.20	1	2.8	27.8	23582.	1	2.8	41.7	.20675E+06	10	27.8	83.3				

TACOM WEIGHT

BIN LINES

PAGE 3 BHOP20 PRICE & WEIGHT & CUBE

```
************
* EWGT     *
************
```

VARIABLE NUMBER	2	MAXIMUM	70.0000000
NUMBER OF DISTINCT VALUES .	2467	MINIMUM	0.0100000
NUMBER OF VALUES COUNTED. .	10194	RANGE	69.9900000
NUMBER OF VALUES NOT COUNTED	717	VARIANCE	196.1772799
		ST.DEV.	14.0063300
		(Q3-Q1)/2	6.8650000
		MX.ST.SC.	4.20
		MN.ST.SC.	-0.79

	ESTIMATE	ST.ERROR	95% CONFIDENCE LOWER	95% CONFIDENCE UPPER
MEAN	11.1114966	0.1038309	10.9079625	11.3150308
MEDIAN	5.3200000	0.1261304		
MODE	21.0000000			

```
H
H
H
H
H
HH
HH
HHHH
HHHHHHH
HHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHH
L----------------------------------------U
```

EACH "H" REPRESENTS 570 COUNT(S)

EACH "-" ABOVE =	2.0000
L=	6.0000
U=	80.0000
CASE NO. OF MIN. VAL. =	22
CASE NO. OF MAX. VAL. =	98

	VALUE	VALUE/S.E.		
			Q1=	1.4200000
SKEWNESS	1.87	103.08	Q3=	15.1500000
			S-=	-2.8948333
KURTOSIS	3.35	92.23	S+=	25.1178266

EACH "." BELOW = 0.7500

```
S  Q            Q         S
-  M 1  M    M   3    M    +                                              M
----I---E----E------O-------------------------------------------------------A
   N    D    A      D                                                       X
        I    N      E
```

VALUE	COUNT	PERCENTS CELL	PERCENTS CUM	VALUE	COUNT	PERCENTS CELL	PERCENTS CUM	VALUE	COUNT	PERCENTS CELL	PERCENTS CUM	VALUE	COUNT	PERCENTS CELL	PERCENTS CUM
0.010000	74	0.4	0.4	6.750000	10	0.1	55.2	16.050000	7	0.0	76.2	31.600000	4	0.0	90.3
0.020000	89	0.5	0.9	6.760000	1	0.0	55.2	16.080000	2	0.0	76.2	31.620000	2	0.0	90.3
0.030000	46	0.3	1.1	6.770000	2	0.0	55.2	16.100000	7	0.0	76.3	31.640000	1	0.0	90.3
0.040000	77	0.4	1.6	6.780000	5	0.0	55.2	16.110000	1	0.0	76.3	31.650000	1	0.0	90.3
0.050000	48	0.3	1.8	6.790000	11	0.1	55.3	16.120000	1	0.0	76.3	31.660000	1	0.0	90.3
0.060000	58	0.3	2.2	6.800000	13	0.1	55.3	16.160000	6	0.0	76.3	31.680000	1	0.0	90.3
0.070000	30	0.2	2.3	6.810000	1	0.0	55.3	16.170000	1	0.0	76.3	31.710000	1	0.0	90.3
0.080000	64	0.4	2.7	6.820000	4	0.0	55.4	16.190000	1	0.0	76.3	31.720000	4	0.0	90.4
0.090000	39	0.2	2.9	6.830000	3	0.0	55.4	16.200000	4	0.0	76.4	31.750000	2	0.0	90.4
0.100000	58	0.3	3.2	6.840000	11	0.1	55.4	16.240000	6	0.0	76.4	31.760000	5	0.0	90.4
0.110000	57	0.3	3.5	6.860000	2	0.0	55.4	16.250000	7	0.0	76.4	31.800000	2	0.0	90.4
0.120000	56	0.3	3.8	6.870000	3	0.0	55.5	16.280000	3	0.0	76.4	31.820000	1	0.0	90.4
0.130000	31	0.2	4.0	6.880000	5	0.0	55.5	16.290000	5	0.0	76.5	31.860000	4	0.0	90.4
0.140000	72	0.4	4.4	6.900000	9	0.0	55.5	16.300000	5	0.0	76.5	31.900000	1	0.0	90.4
0.150000	38	0.2	4.6	6.910000	4	0.0	55.6	16.310000	2	0.0	76.5	31.920000	13	0.1	90.5
0.160000	40	0.2	4.8	6.920000	12	0.1	55.6	16.320000	13	0.1	76.6	31.950000	1	0.0	90.5
0.170000	29	0.2	5.0	6.930000	10	0.1	55.7	16.360000	4	0.0	76.6	32.000000	33	0.2	90.7
0.180000	73	0.4	5.4	6.940000	2	0.0	55.7	16.380000	2	0.0	76.6	32.040000	1	0.0	90.7
0.190000	16	0.1	5.5	6.960000	7	0.0	55.8	16.390000	1	0.0	76.6	32.100000	6	0.0	90.7

TACOM CUBE

BIN LINES

PAGE 4 BNDP20 PRICE & WEIGHT & CUBE

```
************
* ECUB     *
************

VARIABLE NUMBER . . . . . . .        5
NUMBER OF DISTINCT VALUES .       1367
NUMBER OF VALUES COUNTED. .      18192
NUMBER OF VALUES NOT COUNTED       719
```

MAXIMUM	10.8750000
MINIMUM	0.0010000
RANGE	10.8740000
VARIANCE	0.2343376
ST.DEV.	0.4840843
(Q3-Q1)/2	0.2600000
MX.ST.SC.	21.65
MN.ST.SC.	-0.82

	ESTIMATE	ST.ERROR	95% CONFIDENCE LOWER	95% CONFIDENCE UPPER
MEAN	0.3960295	0.0035891	0.3897946	0.4038644
MEDIAN	0.1860000	0.0043301		
MODE	0.0240000			

```
H
H
H
H                                           EACH "H"
H                                           REPRESENTS
H                                           1895
H                                           COUNT(S)
HH
HHH
HHHHHHH                          H
L-----------------------------------U
```

EACH "-" ABOVE = 0.3000
L= 0.0000
U= 12.0000

CASE NO. OF MIN. VAL. = 22
CASE NO. OF MAX. VAL. =16241

	VALUE	VALUE/S.E.		
			Q1=	0.0480000
			Q3=	0.5680000
SKEWNESS	2.01	110.66	S-=	-0.0872548
KURTOSIS	13.30	366.08	S+=	0.0889138

EACH "." BELOW = 0.1000

```
 SQ    Q S
 -MN  M3 +
 -EE..E...............................................................................M
  ND  A                                                                               A
   E  N                                                                               X
```

VALUE	COUNT	PERCENTS CELL	PERCENTS CUM	VALUE	COUNT	PERCENTS CELL	PERCENTS CUM	VALUE	COUNT	PERCENTS CELL	PERCENTS CUM	VALUE	COUNT	PERCENTS CELL	PERCENTS CUM
-.10000E-02	145	0.8	0.8	0.35100	10	0.1	63.4	0.76300	2	0.0	81.5	1.2840	4	0.0	91.5
-.20000E-02	195	1.1	1.9	0.35200	11	0.1	63.5	0.76400	3	0.0	81.5	1.2850	1	0.0	91.5
30000E-02	141	0.8	2.6	0.35400	17	0.1	63.6	0.76500	8	0.0	81.5	1.2860	1	0.0	91.5
-.40000E-02	166	0.9	3.6	0.35500	5	0.0	63.6	0.76600	1	0.0	81.5	1.2870	2	0.0	91.5
-.50000E-02	115	0.6	4.2	0.35600	4	0.0	63.6	0.76700	12	0.1	81.6	1.2880	4	0.0	91.5
-.60000E-02	201	1.1	5.3	0.35700	9	0.0	63.7	0.76800	9	0.0	81.6	1.2900	6	0.0	91.6
-.70000E-02	114	0.6	5.9	0.35800	4	0.0	63.7	0.77000	18	0.1	81.7	1.2910	2	0.0	91.6
-.80000E-02	159	0.9	6.8	0.36000	50	0.3	64.0	0.77100	6	0.0	81.8	1.2920	1	0.0	91.6
-.90000E-02	76	0.4	7.2	0.36100	1	0.0	64.0	0.77200	1	0.0	81.8	1.2950	1	0.0	91.6
-.10000E-01	142	0.8	8.0	0.36200	10	0.1	64.0	0.77300	4	0.0	81.8	1.2960	3	0.0	91.6
-.11000E-01	66	0.4	8.4	0.36300	6	0.0	64.0	0.77400	18	0.1	81.8	1.2980	1	0.0	91.6
-.12000E-01	173	1.0	9.3	0.36400	21	0.1	64.2	0.77500	5	0.0	81.9	1.2990	2	0.0	91.6
-.13000E-01	94	0.5	9.8	0.36500	4	0.0	64.2	0.77600	5	0.0	81.9	1.3000	29	0.2	91.8
-.14000E-01	128	0.7	10.5	0.36600	7	0.0	64.2	0.77700	2	0.0	81.9	1.3050	2	0.0	91.8
-.15000E-01	142	0.8	11.3	0.36800	13	0.1	64.3	0.77800	5	0.0	81.9	1.3060	1	0.0	91.8
-.16000E-01	94	0.5	11.8	0.36900	13	0.1	64.4	0.77900	3	0.0	82.0	1.3080	1	0.0	91.8
-.17000E-01	59	0.3	12.1	0.37000	8	0.0	64.4	0.78000	11	0.1	82.0	1.3100	5	0.0	91.8
-.18000E-01	136	0.7	12.9	0.37200	12	0.1	64.5	0.78200	6	0.0	82.1	1.3110	3	0.0	91.9
-.19000E-01	50	0.3	13.2	0.37300	3	0.0	64.5	0.78300	1	0.0	82.1	1.3120	4	0.0	91.9

TACOM PRICE

BIN LINES

PAGE 2 BMDP2D PRICE & WEIGHT & CUBE

```
************
* EPRC     *
************

VARIABLE NUMBER . . . . . . .          1      MAXIMUM     310222.0000000
NUMBER OF DISTINCT VALUES .         5939      MINIMUM          0.0200000
NUMBER OF VALUES COUNTED. .        18872      RANGE       310221.9799995
NUMBER OF VALUES NOT COUNTED          39      VARIANCE   6286920.5357034
                                              ST.DEV.       2507.3732350
                                              (Q3-Q1)/2       48.8350000
                                              MX.ST.SC.      123.66
                                              MN.ST.SC.       -0.07

                                                   95% CONFIDENCE
              ESTIMATE       SE.ERROR        LOWER          UPPER
MEAN       160.0695099    18.2519816    132.2939886    203.8450311
MEDIAN      37.6300000     0.6755001
MODE        55.3700000
```

```
 H
 H
 H
 H                                          EACH "H"
 H                                         REPRESENTS
 H                                            1885
 H                                          COUNT(S)
 H
 H
HHHHHH  H                    H
L---------------------------------------U

          EACH "-" ABOVE =    10000.0000
                       L=         0.0000
                       U=    400000.0000
   CASE NO. OF MIN. VAL. = 5507
   CASE NO. OF MAX. VAL. =17765

                                            Q1=   11.3300000
                  VALUE     VALUE/S.E.      Q3=  109.0000000
SKEWNESS         104.10       5838.18       S-=-2339.3037252
KURTOSIS       12498.84     350488.00       S+= 2675.4427449

          EACH "." BELOW =     2500.0000
```

```
SBS
-H+                                                                          H
-.S..........................................................................A
 N                                                                           X
```

VALUE	COUNT	PERCENTS CELL	PERCENTS CUM	VALUE	COUNT	PERCENTS CELL	PERCENTS CUM	VALUE	COUNT	PERCENTS CELL	PERCENTS CUM	VALUE	COUNT	PERCENTS CELL	PERCENTS CUM
.20000E-01	2	0.0	0.0	23.340	3	0.0	39.6	69.040	1	0.0	64.4	190.82	1	0.0	84.4
.50000E-01	8	0.0	0.1	23.360	5	0.0	39.7	69.090	1	0.0	64.4	191.00	1	0.0	84.4
.70000E-01	2	0.0	0.1	23.400	6	0.0	39.7	69.100	1	0.0	64.4	191.04	1	0.0	84.4
.00000E-01	7	0.0	0.1	23.410	2	0.0	39.7	69.120	2	0.0	64.4	191.10	1	0.0	84.4
0.10000	13	0.1	0.2	23.440	23	0.1	39.8	69.240	1	0.0	64.4	191.50	1	0.0	84.4
0.11000	7	0.0	0.2	23.460	1	0.0	39.8	69.250	1	0.0	64.4	191.52	4	0.0	84.4
0.12000	3	0.0	0.2	23.500	5	0.0	39.9	69.300	7	0.0	64.4	191.58	4	0.0	84.5
0.13000	1	0.0	0.2	23.520	11	0.1	39.9	69.310	1	0.0	64.4	191.62	17	0.1	84.5
0.14000	5	0.0	0.3	23.530	2	0.0	39.9	69.360	1	0.0	64.4	191.76	1	0.0	84.6
0.15000	1	0.0	0.3	23.540	3	0.0	40.0	69.370	2	0.0	64.4	191.88	1	0.0	84.6
0.16000	13	0.1	0.3	23.560	2	0.0	40.0	69.380	2	0.0	64.5	192.00	7	0.0	84.6
0.17000	4	0.0	0.4	23.580	2	0.0	40.0	69.480	7	0.0	64.5	192.24	1	0.0	84.6
0.18000	5	0.0	0.4	23.600	1	0.0	40.0	69.500	1	0.0	64.5	192.36	1	0.0	84.6
0.19000	1	0.0	0.4	23.640	3	0.0	40.0	69.520	1	0.0	64.5	192.56	1	0.0	84.6
0.20000	5	0.0	0.4	23.660	1	0.0	40.0	69.600	5	0.0	64.5	192.60	2	0.0	84.6
0.21000	2	0.0	0.4	23.700	1	0.0	40.0	69.660	1	0.0	64.5	192.61	1	0.0	84.6
0.22000	7	0.0	0.5	23.730	1	0.0	40.0	69.680	1	0.0	64.5	192.90	3	0.0	84.6
0.23000	10	0.1	0.5	23.750	6	0.0	40.0	69.700	2	0.0	64.6	193.00	1	0.0	84.6
0.24000	13	0.1	0.6	23.760	5	0.0	40.1	69.720	51	0.3	64.8	193.06	2	0.0	84.7

TACOM WEIGHT

PAGE 3 BREP2E PRICE & WEIGHT & CUBE — RACK LINES

```
*************
* EWGT      *
*************

VARIABLE NUMBER . . . . . . .        2     MAXIMUM        2456.0000000
NUMBER OF DISTINCT VALUES .       2536     MINIMUM           0.1200000
NUMBER OF VALUES COUNTED. .       7291     RANGE          2455.8800000
NUMBER OF VALUES NOT COUNTED         0     VARIANCE      76708.5217450
                                           ST.DEV.         276.9630332
                                           (Q3-Q1)/2        83.3000000
                                           MX.ST.SC.          8.29
                                           MN.ST.SC.         -0.72

                                              95% CONFIDENCE
               ESTIMATE       ST.ERROR      LOWER         UPPER
MEAN         198.7266328     3.2436872   192.3682239   205.0850417
MEDIAN       108.3800000     1.4433763
MODE          42.0000000
```

```
M
M
MM
MM
MM                                          EACH "M"
MM                                          REPRESENTS
MMM                                            250
MMM                                         COUNT(S)
MMMMM
MMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMM
L---------------------------------------------U

                EACH "-" ABOVE =       75.0000
                            L=          0.0000
                            U=       2850.0000
       CASE NO. OF MIN. VAL. = 6316
       CASE NO. OF MAX. VAL. =  396

                                               Q1=    50.0000000
              VALUE    VALUE/S.E.              Q3=   216.6000000
SKEWNESS       3.88       135.17               S-=   -78.2364003
KURTOSIS      15.58       341.24               S+=   475.6896660

                EACH "." BELOW =       20.0000

S     Q         S     S
-   M Q1 M    Q3      +
----I.E..E....E....................................................M
    M D  D    A                                                    A
      E  I    N                                                    X
```

VALUE	COUNT	CELL %	CUM %	VALUE	COUNT	CELL %	CUM %	VALUE	COUNT	CELL %	CUM %	VALUE	COUNT	CELL %	CUM %
0.1200	1	0.0	0.0	61.2000	1	0.0	26.5	120.5200	1	0.0	54.8	286.0000	2	0.0	81.8
0.3300	1	0.0	0.0	61.4400	1	0.0	26.5	120.6300	1	0.0	54.8	286.0000	2	0.0	81.9
1.0100	1	0.0	0.0	61.4600	5	0.1	26.6	120.6600	1	0.0	54.8	286.7400	1	0.0	81.9
1.7400	1	0.0	0.1	61.4800	2	0.0	26.6	121.0000	1	0.0	54.8	286.7500	2	0.0	81.9
1.7800	1	0.0	0.1	61.5600	1	0.0	26.6	121.0300	1	0.0	54.8	287.0000	1	0.0	81.9
2.2000	1	0.0	0.1	61.6000	3	0.0	26.7	121.0400	1	0.0	54.9	288.0000	6	0.1	82.0
2.3300	4	0.1	0.1	61.8000	1	0.0	26.7	121.2600	1	0.0	54.9	288.4200	2	0.0	82.0
3.0000	1	0.0	0.2	62.0000	3	0.0	26.7	121.3000	2	0.0	54.9	288.6000	1	0.0	82.0
3.6500	1	0.0	0.2	62.1000	1	0.0	26.7	121.5000	1	0.0	54.9	290.0000	5	0.1	82.1
3.7500	1	0.0	0.2	62.1500	1	0.0	26.7	121.7200	1	0.0	54.9	290.0400	1	0.0	82.1
4.5000	1	0.0	0.2	62.1600	1	0.0	26.8	121.9800	1	0.0	54.9	291.0600	1	0.0	82.1
5.0000	6	0.1	0.3	62.3700	1	0.0	26.8	122.0000	1	0.0	55.0	291.7200	1	0.0	82.2
5.5000	2	0.0	0.3	62.4000	1	0.0	26.8	122.2000	1	0.0	55.0	292.0500	1	0.0	82.2
5.7600	1	0.0	0.3	62.4500	1	0.0	26.8	122.2200	2	0.0	55.0	292.5000	1	0.0	82.2
5.8600	1	0.0	0.3	62.4600	1	0.0	26.8	122.2500	1	0.0	55.0	293.3700	2	0.0	82.2
6.2600	7	0.1	0.4	62.4900	1	0.0	26.8	122.4300	1	0.0	55.0	294.0600	6	0.1	82.3
6.3500	1	0.0	0.4	62.5200	1	0.0	26.8	122.5000	2	0.0	55.1	294.8200	5	0.1	82.4
6.6800	1	0.0	0.5	62.6500	1	0.0	26.9	122.5500	1	0.0	55.1	295.0000	1	0.0	82.4
6.8600	1	0.0	0.5	62.8000	1	0.0	26.9	122.6700	1	0.0	55.1	295.4700	2	0.0	82.4

TACOM CUBE

RACK LINES

PAGE 4 BRONZE PRICE & WEIGHT & CUBE

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************
* ECLD     *
************

VARIABLE NUMBER . . . . . . .          3
NUMBER OF DISTINCT VALUES .         2774
NUMBER OF VALUES COUNTED. .         7291
NUMBER OF VALUES NOT COUNTED           0
```

MAXIMUM	40.0000000
MINIMUM	0.0020000
RANGE	39.9980000
VARIANCE	67.0729240
ST.DEV.	8.1898001
(Q3-Q1)/2	4.0850000
MX.ST.SC.	3.87
MN.ST.SC.	-1.02

	ESTIMATE	ST.ERROR	95% CONFIDENCE LOWER	UPPER
MEAN	8.3429083	0.0959136	8.1549700	8.5310067
MEDIAN	5.0500000	0.0025611		
MODE	2.6000000			

```
H
H
HH
HH                                        EACH "H"
HH                                        REPRESENTS
HHH                                         160
HHHH                                      COUNT(S)
HHHHHH
HHHHHHHHH H
HHHHHHHHHHHHHHHHHHHHHHHHHHHHHHH
L---------------------------------------------U
```

EACH "-" ABOVE = 1.5000
L= 0.0000
U= 57.0000
CASE NO. OF MIN. VAL. = 6316
CASE NO. OF MAX. VAL. = 5037

	VALUE	VALUE/S.E.		
SKEWNESS	1.73	60.20	Q1=	2.7420000
KURTOSIS	2.51	43.63	Q3=	10.9400000
			S-=	0.1531022
			S+=	16.5327545

EACH "." BELOW = 0.5000

```
S   Q                 C       S
P   P   P   P         3       +                                   M
1...Q...E...E.............................................A
M   D   Q   A                                                     X
    E   1   N
```

VALUE	COUNT	CELL	CUM	VALUE	COUNT	CELL	CUM	VALUE	COUNT	CELL	CUM	VALUE	COUNT	CELL	CUM
0.002000	1	0.0	0.0	2.926000	1	0.0	27.3	6.032000	1	0.0	56.6	13.357000	2	0.0	80.5
0.060000	1	0.0	0.0	2.928000	4	0.1	27.4	6.036000	1	0.0	56.6	13.363000	1	0.0	80.5
0.065000	1	0.0	0.0	2.934000	1	0.0	27.4	6.088000	2	0.0	56.6	13.365000	3	0.0	80.6
0.070000	1	0.0	0.1	2.936000	37	0.5	27.9	6.093000	1	0.0	56.6	13.380000	2	0.0	80.6
0.075000	1	0.0	0.1	2.940000	13	0.2	28.1	6.100000	1	0.0	56.6	13.400000	6	0.1	80.7
0.090000	1	0.0	0.1	2.945000	1	0.0	28.1	6.108000	1	0.0	56.6	13.405000	1	0.0	80.7
0.095000	1	0.0	0.1	2.948000	4	0.1	28.1	6.115000	2	0.0	56.7	13.407000	1	0.0	80.7
0.145000	1	0.0	0.1	2.950000	1	0.0	28.1	6.124000	3	0.0	56.7	13.440000	3	0.0	80.7
0.150000	1	0.0	0.1	2.952000	2	0.0	28.2	6.125000	4	0.1	56.8	13.452000	2	0.0	80.8
0.155000	1	0.0	0.1	2.954000	2	0.0	28.2	6.127000	2	0.0	56.8	13.500000	1	0.0	80.8
0.180000	1	0.0	0.2	2.960000	3	0.0	28.2	6.133000	3	0.0	56.8	13.520000	2	0.0	80.8
0.190000	1	0.0	0.2	2.961000	1	0.0	28.3	6.136000	2	0.0	56.9	13.600000	4	0.1	80.9
0.209000	3	0.0	0.2	2.964000	1	0.0	28.3	6.140000	3	0.0	56.9	13.616000	10	0.1	81.0
0.210000	1	0.0	0.2	2.967000	6	0.1	28.4	6.144000	2	0.0	56.9	13.620000	2	0.0	81.0
0.212000	1	0.0	0.2	2.968000	2	0.0	28.4	6.150000	1	0.0	56.9	13.640000	1	0.0	81.0
0.230000	1	0.0	0.2	2.970000	3	0.0	28.4	6.156000	1	0.0	57.0	13.650000	1	0.0	81.1
0.235000	1	0.0	0.3	2.976000	1	0.0	28.4	6.166000	1	0.0	57.0	13.662000	2	0.0	81.1
0.240000	1	0.0	0.3	2.988000	12	0.2	28.6	6.188000	2	0.0	57.0	13.664000	1	0.0	81.1
0.245000	1	0.0	0.3	2.950000	1	0.0	28.6	6.200000	2	0.0	57.0	13.676000	4	0.1	81.2

TACOM PRICE

RACK LINES

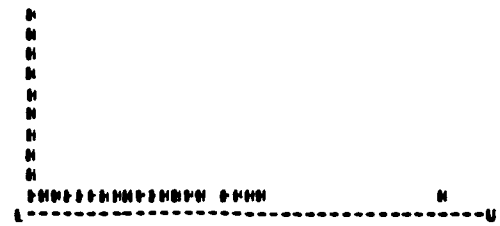
PAGE 2 BDDPZC PRICE & WEIGHT & CUBE

****
* EPRC *
****

VARIABLE NUMBER	1
NUMBER OF DISTINCT VALUES .	3405
NUMBER OF VALUES COUNTED. .	7291
NUMBER OF VALUES NOT COUNTED	0

MAXIMUM	51132.0000000
MINIMUM	2.0000000
RANGE	51125.9240001
VARIANCE	3317341.6309014
ST.DEV.	1821.3590050
(Q3-Q1)/2	279.7000000
PX.ST.SC.	27.66
MN.ST.SC.	-0.42

	ESTIMATE	ST.ERROR	95% CONFIDENCE LOWER	UPPER
MEAN	761.5201746	21.3305253	719.7141756	803.3421616
MEDIAN	292.0000000	4.6180043		
MODE	126.0000000			



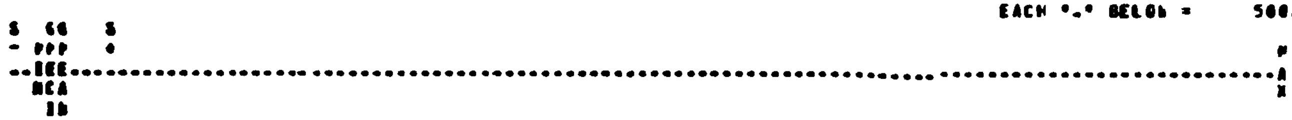
EACH "H" REPRESENTS 644 COUNT(S)

EACH "-" ABOVE = 1500.0000
L= 0.0000
U= 57000.0000

CASE NO. OF MIN. VAL. = 5737
CASE NO. OF MAX. VAL. = 6729

	VALUE	VALUE/S.E.	
			Q1= 145.6000000
			Q3= 705.0000000
SKEWNESS	16.64	370.78	S-=-1059.0289064
KURTOSIS	173.02	3015.60	S+= 2582.0052636

EACH "." BELOW = 500.0000



VALUE	COUNT	PERCENTS CELL	CUM	VALUE	COUNT	PERCENTS CELL	CUM	VALUE	COUNT	PERCENTS CELL	CUM	VALUE	COUNT	PERCENTS CELL	CUM
2.000	1	0.0	0.0	155.000	32	0.4	27.1	343.440	1	0.0	55.5	504.500	1	0.0	80.5
4.330	1	0.0	0.0	155.170	1	0.0	27.1	344.440	3	0.0	55.5	506.430	1	0.0	80.6
8.200	1	0.0	0.0	155.520	1	0.0	27.1	344.480	2	0.0	55.6	509.000	6	0.1	80.6
10.650	3	0.0	0.1	155.550	3	0.0	27.1	344.700	8	0.1	55.7	510.000	4	0.1	80.7
12.640	1	0.0	0.1	155.680	1	0.0	27.2	345.640	2	0.0	55.7	511.000	1	0.0	80.7
14.200	1	0.0	0.1	155.710	1	0.0	27.2	346.560	11	0.2	55.8	512.660	1	0.0	80.7
14.500	2	0.0	0.1	156.240	1	0.0	27.2	347.240	3	0.0	55.9	513.200	2	0.0	80.7
14.700	4	0.1	0.2	156.600	1	0.0	27.2	347.360	1	0.0	55.9	514.160	1	0.0	80.8
14.710	1	0.0	0.2	157.000	2	0.0	27.2	347.400	8	0.1	56.0	514.400	6	0.1	80.8
16.900	1	0.0	0.2	157.500	1	0.0	27.2	347.700	1	0.0	56.0	516.000	2	0.0	80.9
16.920	4	0.1	0.3	157.600	2	0.0	27.3	347.760	2	0.0	56.1	517.530	1	0.0	80.9
17.400	1	0.0	0.3	157.680	3	0.0	27.3	348.400	2	0.0	56.1	519.200	1	0.0	80.9
17.960	3	0.0	0.3	157.700	4	0.1	27.4	348.150	1	0.0	56.1	520.000	7	0.1	81.0
19.320	1	0.0	0.3	157.760	6	0.1	27.4	348.600	4	0.1	56.2	522.000	1	0.0	81.0
20.300	1	0.0	0.4	157.920	1	0.0	27.5	349.400	1	0.0	56.2	524.000	3	0.0	81.0
20.310	1	0.0	0.4	158.000	4	0.1	27.5	349.520	1	0.0	56.2	525.760	1	0.0	81.1
21.300	1	0.0	0.4	158.040	1	0.0	27.5	350.400	1	0.0	56.2	526.000	1	0.0	81.1
21.620	1	0.0	0.4	158.080	2	0.0	27.6	350.280	1	0.0	56.2	529.160	1	0.0	81.1
21.760	1	0.0	0.4	158.240	1	0.0	27.6	351.600	1	0.0	56.2	530.000	1	0.0	81.1

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 ************
 * ENGT     *
 ************

VARIABLE NUMBER . . . . . .        2
NUMBER OF DISTINCT VALUES .      657
NUMBER OF VALUES COUNTED. .     1183
NUMBER OF VALUES NOT COUNTED       0

MAXIMUM      53152.0000000
MINIMUM         38.9400000
RANGE        53113.0599999
VARIANCE 40641764.0681152
ST.DEV.       6375.0893381
(Q3-Q1)/2     1697.0000000
#K-ST.SC.        7.68
MM.ST.SC.       -0.66

                    95% CONFIDENCE
             ESTIMATE      ST.ERROR      LOWER          UPPER
MEAN      4217.9060355   185.3505602  3854.2532373  4581.5588337
MEDIAN    2336.0000000   142.8942582
MODE      3006.0000000

H
H
H
H                                                    EACH "H"
HH                                                   REPRESENTS
HH                                                      54
HH                                                   COUNT(S)
HH
HHHH
HHHHHHHHHH HHH H HHHHH H   H
L------------------------------U

      EACH "-" ABOVE =    2000.0000
                   L=       0.0000
                   U=   60000.0000
CASE NO. OF MIN. VAL. =  486
CASE NO. OF MAX. VAL. =  249

                                                     Q1=  869.2400000
             VALUE    VALUE/S.E.                     Q3= 4265.0000000
SKEWNESS      3.68         51.74                     S-=-2157.1033026
KURTOSIS     16.56        116.27                     S+=10592.9953735

      EACH "." BELOW =     500.0000

S     Q     Q          S                                                  M
-    M1  M M M         +                                                  A
-----E---E-D-E-----------------------------------------------------------X
     N   D D A
         E E N
```

VALUE	COUNT	PERCENTS CELL	PERCENTS CUM	VALUE	COUNT	PERCENTS CELL	PERCENTS CUM	VALUE	COUNT	PERCENTS CELL	PERCENTS CUM	VALUE	COUNT	PERCENTS CELL	PERCENTS CUM
38.94	2	0.2	0.2	866.25	1	0.1	24.8	2240.00	1	0.1	49.1	5140.00	1	0.1	78.7
45.00	3	0.3	0.4	867.54	1	0.1	24.9	2250.00	2	0.2	49.3	5174.40	1	0.1	78.8
61.56	1	0.1	0.5	867.80	1	0.1	24.9	2270.00	1	0.1	49.4	5199.00	2	0.2	79.0
65.00	1	0.1	0.6	869.24	1	0.1	25.0	2275.00	1	0.1	49.5	5200.00	1	0.1	79.0
67.50	12	1.0	1.6	872.69	1	0.1	25.1	2289.21	1	0.1	49.5	5207.15	1	0.1	79.1
75.42	1	0.1	1.7	881.21	2	0.2	25.3	2290.00	2	0.2	49.7	5216.00	1	0.1	79.2
80.00	1	0.1	1.8	882.00	1	0.1	25.4	2296.00	1	0.1	49.8	5218.29	1	0.1	79.3
125.44	1	0.1	1.9	884.46	1	0.1	25.4	2310.00	1	0.1	49.9	5239.70	1	0.1	79.4
150.24	1	0.1	1.9	888.00	1	0.1	25.5	2320.00	1	0.1	50.0	5244.00	1	0.1	79.5
160.00	5	0.4	2.4	895.40	1	0.1	25.6	2336.00	1	0.1	50.0	5285.00	1	0.1	79.5
180.00	2	0.2	2.5	897.00	1	0.1	25.7	2349.55	1	0.1	50.1	5316.00	3	0.3	79.8
182.64	2	0.2	2.7	900.00	2	0.2	25.9	2350.56	2	0.2	50.3	5322.00	2	0.2	80.0
184.74	1	0.1	2.8	906.50	1	0.1	26.0	2371.30	1	0.1	50.4	5343.00	1	0.1	80.1
190.50	1	0.1	2.9	916.00	1	0.1	26.0	2382.00	1	0.1	50.5	5355.00	1	0.1	80.1
200.00	3	0.3	3.1	920.00	2	0.2	26.2	2390.85	1	0.1	50.5	5530.00	2	0.2	80.3
207.00	5	0.4	3.6	936.00	2	0.2	26.4	2400.00	1	0.1	50.6	5600.00	1	0.1	80.4
210.32	1	0.1	3.6	945.00	1	0.1	26.5	2426.00	1	0.1	50.7	5760.00	1	0.1	80.5
219.00	1	0.1	3.7	952.00	1	0.1	26.5	2450.00	1	0.1	50.8	5813.50	1	0.1	80.6
225.00	8	0.7	4.4	960.00	2	0.2	26.7	2483.41	1	0.1	50.9	5850.00	1	0.1	80.6

TACOM CUBE

PAGE 4 BNDP20 PRICE & WEIGHT & CUBE

BULK LINES

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************
* ECUB     *
************

VARIABLE NUMBER . . . . . . .      3     MAXIMUM        2131.2000000
NUMBER OF DISTINCT VALUES .      641     MINIMUM           1.5200000
NUMBER OF VALUES COUNTED. .     1183     RANGE          2129.6800000
NUMBER OF VALUES NOT COUNTED       0     VARIANCE      31926.6238517
                                         ST.DEV.         178.6802220
                                         (Q3-Q1)/2        63.0830000
                                         PX.ST.SC.        11.05
                                         MN.ST.SC.        -0.87

                                                95% CONFIDENCE
          ESTIMATE        ST.ERROR        LOWER            UPPER
MEAN      156.7962190     5.1949829     146.6038034      166.9886361
MEDIAN     95.2000000     0.6920206
MODE       95.2000000
```

```
H
H
HH
HH                                     EACH "H"
HH                                     REPRESENTS
HH                                        47
HH                                     COUNT(S)
HHH
HHHH
HHHHHHHHHHHH HHH        H   H
L------------------------------U

         EACH "-" ABOVE =      75.0000
                      L=        0.0000
                      U=     2250.0000
CASE NO. OF MIN. VAL. = 1105
CASE NO. OF MAX. VAL. =  922

                                        Q1=   55.4000000
                VALUE    VALUE/S.E.     Q3=  181.5660000
SKEWNESS         3.78        53.03      S-=  -21.8840083
KURTOSIS        23.61       165.75      S+=  335.4764478

         EACH "." BELOW =      20.0000
```

```
S  Q     Q       S
-M 1 M  M3       +                                                                      M
-I---E--E..........................................................................A
 N   D  A                                                                               X
     I  N
```

VALUE	COUNT	PERCENTS CELL	CUM	VALUE	COUNT	PERCENTS CELL	CUM	VALUE	COUNT	PERCENTS CELL	CUM	VALUE	COUNT	PERCENTS CELL	CUM
1.520	1	0.1	0.1	55.480	7	0.6	25.8	91.640	1	0.1	46.2	181.566	1	0.1	75.1
12.000	8	0.7	0.8	55.500	1	0.1	25.9	92.070	1	0.1	46.2	182.500	1	0.1	75.1
13.000	1	0.1	0.8	55.600	1	0.1	26.0	92.200	1	0.1	46.3	184.960	2	0.2	75.3
16.675	1	0.1	0.9	55.759	1	0.1	26.0	92.300	1	0.1	46.4	185.600	4	0.3	75.7
18.590	1	0.1	1.0	56.000	1	0.1	26.1	92.400	2	0.2	46.6	185.607	1	0.1	75.7
23.184	1	0.1	1.1	56.280	1	0.1	26.2	92.800	16	1.4	47.9	187.915	1	0.1	75.8
23.240	1	0.1	1.2	56.303	1	0.1	26.3	93.250	1	0.1	48.0	188.000	3	0.3	76.1
24.000	1	0.1	1.3	56.373	6	0.5	26.8	93.400	1	0.1	48.1	189.000	1	0.1	76.2
24.544	1	0.1	1.4	56.400	2	0.2	27.0	93.600	1	0.1	48.2	189.200	2	0.2	76.3
28.700	3	0.3	1.6	56.640	1	0.1	27.0	94.000	2	0.2	48.4	189.631	1	0.1	76.4
29.700	5	0.4	2.0	56.644	1	0.1	27.1	94.400	1	0.1	48.4	190.400	8	0.7	77.1
36.000	1	0.1	2.1	56.800	1	0.1	27.2	94.600	2	0.2	48.6	192.456	1	0.1	77.2
36.700	2	0.2	2.3	56.940	1	0.1	27.3	94.944	1	0.1	48.7	193.000	4	0.3	77.5
36.900	1	0.1	2.4	57.226	1	0.1	27.4	95.000	1	0.1	48.8	193.380	1	0.1	77.6
38.610	1	0.1	2.5	57.400	1	0.1	27.5	95.040	2	0.2	48.9	195.200	2	0.2	77.8
39.204	1	0.1	2.5	57.610	1	0.1	27.6	95.200	45	3.8	52.7	198.000	1	0.1	77.9
39.234	2	0.2	2.7	57.700	1	0.1	27.6	95.560	2	0.2	52.9	199.269	1	0.1	77.9
40.200	1	0.1	2.8	57.800	2	0.2	27.8	96.000	2	0.2	53.1	200.000	2	0.2	78.1
40.310	1	0.1	2.9	57.834	1	0.1	27.9	96.200	1	0.1	53.2	200.108	1	0.1	78.2

EPAC

VARIABLE NUMBER	1	MAXIMUM	707610.0000000
NUMBER OF DISTINCT VALUES .	712	MINIMUM	43.6200000
NUMBER OF VALUES COUNTED. .	1183	RANGE	707566.3800011
NUMBER OF VALUES NOT COUNTED	0	VARIANCE	**********
		ST.DEV.	54732.9120493
		(Q3-Q1)/2	5357.0000000
		PX.ST.SC.	12.56
		MN.ST.SC.	-0.37

	ESTIMATE	ST.ERROR	95% CONFIDENCE LOWER	UPPER
MEAN	20145.3112933	1591.3150968	17023.1940074	23267.4285793
MEDIAN	4464.0000000	243.3099506		
MODE	11626.0000000			

```
M
M
M
M                                   EACH 'M'
M                                   REPRESENTS
M                                     103
M                                   COUNT(S)
M
M
MMMMMMMMM M   M    M       M
L-----------------------------U
```

EACH '-' ABOVE = 25000.0000
L= 0.0000
U= 750000.0000
CASE NO. OF MIN. VAL. = 486
CASE NO. OF MAX. VAL. = 1150

Q1= 1430.0000000
Q3=12144.0000000

	VALUE	VALUE/S.E.
SKEWNESS	6.43	90.27
KURTOSIS	56.44	396.28

S-=**********
S+=74878.2233424

EACH '.' BELOW = 7500.0000

```
S   00      S
-   MMM     +
----IQE-----------------------------------------------------------------M
    NOA                                                               A
     EN                                                               X
```

VALUE	COUNT	PERCENTS CELL	CUM	VALUE	COUNT	PERCENTS CELL	CUM	VALUE	COUNT	PERCENTS CELL	CUM	VALUE	COUNT	PERCENTS CELL	CUM
43.62	2	0.2	0.2	1350.00	4	0.3	23.8	4215.75	1	0.1	47.8	10940.80	1	0.1	68.6
45.90	1	0.1	0.3	1381.00	7	0.6	24.4	4218.00	1	0.1	47.9	11070.00	1	0.1	68.7
60.84	1	0.1	0.3	1386.00	1	0.1	24.5	4240.00	1	0.1	48.0	11186.00	1	0.1	68.8
72.86	3	0.3	0.6	1391.94	1	0.1	24.6	4248.00	1	0.1	48.1	11284.00	3	0.3	69.1
76.87	1	0.1	0.7	1392.00	1	0.1	24.7	4251.30	1	0.1	48.2	11305.00	1	0.1	69.1
104.00	1	0.1	0.8	1404.00	1	0.1	24.8	4284.00	1	0.1	48.3	11490.00	1	0.1	69.2
189.29	12	1.0	1.8	1430.00	3	0.3	25.0	4300.75	2	0.2	48.4	11626.00	44	3.7	73.0
200.20	1	0.1	1.9	1444.86	1	0.1	25.1	4340.00	1	0.1	48.5	11670.06	1	0.1	73.0
210.24	2	0.2	2.0	1469.27	1	0.1	25.2	4354.50	9	0.8	49.3	11800.80	1	0.1	73.1
259.20	1	0.1	2.1	1470.00	1	0.1	25.3	4358.40	1	0.1	49.4	11808.48	1	0.1	73.2
282.20	1	0.1	2.2	1476.00	2	0.2	25.4	4360.00	2	0.2	49.5	11845.00	1	0.1	73.3
297.00	3	0.3	2.5	1480.31	1	0.1	25.5	4362.60	1	0.1	49.6	11872.00	1	0.1	73.4
319.00	3	0.3	2.7	1480.53	3	0.3	25.8	4366.20	1	0.1	49.7	11900.00	1	0.1	73.5
319.90	2	0.2	2.9	1520.00	1	0.1	25.9	4390.00	1	0.1	49.8	12028.00	1	0.1	73.5
321.50	1	0.1	3.0	1525.20	1	0.1	26.0	4410.00	1	0.1	49.9	12028.96	1	0.1	73.6
342.00	1	0.1	3.0	1530.00	1	0.1	26.0	4425.00	1	0.1	50.0	12102.00	1	0.1	73.7
361.00	5	0.4	3.5	1540.50	1	0.1	26.1	4464.00	1	0.1	50.0	12144.00	16	1.4	75.1
379.60	1	0.1	3.6	1546.60	1	0.1	26.2	4483.00	3	0.3	50.3	12441.00	1	0.1	75.1
388.00	3	0.3	3.8	1548.00	1	0.1	26.3	4515.00	1	0.1	50.4	12599.00	1	0.1	75.2

TROSCOM WEIGHT

BIN LINES

EVGT

VARIABLE NUMBER	2
NUMBER OF DISTINCT VALUES	656
NUMBER OF VALUES COUNTED	2958
NUMBER OF VALUES NOT COUNTED	114

MAXIMUM	67.9000000
MINIMUM	0.0100000
RANGE	67.8900000
VARIANCE	66.8000582
ST.DEV.	8.1731296
(Q3-Q1)/2	2.6050000
MX.ST.SC.	7.67
MN.ST.SC.	-0.64

	ESTIMATE	ST.ERROR	95% CONFIDENCE LOWER	95% CONFIDENCE UPPER
MEAN	5.2316031	0.1507865	4.9359452	5.5272611
MEDIAN	1.9600000	0.0750556		
MODE	1.0000000			

EACH 'H' REPRESENTS 151 COUNT(S)

EACH '-' ABOVE = 2.0000
L= 0.0000
U= 60.0000

CASE NO. OF MIN. VAL. = 665
CASE NO. OF MAX. VAL. = 2966

	VALUE	VALUE/S.E.
SKEWNESS	3.15	69.62
KURTOSIS	12.85	142.19

Q1= 0.6300000
Q3= 6.0000000
S-= -2.9415267
S+= 13.4047330

EACH '.' BELOW = 0.7500

VALUE	COUNT	PERCENTS CELL	PERCENTS CUM	VALUE	COUNT	PERCENTS CELL	PERCENTS CUM	VALUE	COUNT	PERCENTS CELL	PERCENTS CUM	VALUE	COUNT	PERCENTS CELL	PERCENTS CUM
0.010000	13	0.4	0.4	2.100000	10	0.3	52.0	5.810000	1	0.0	74.3	13.000000	2	0.1	86.7
0.020000	28	0.9	1.1	2.120000	4	0.1	52.1	5.820000	1	0.0	74.4	13.160000	1	0.0	88.8
0.030000	5	0.2	1.3	2.160000	6	0.2	52.3	5.830000	2	0.1	74.4	13.250000	1	0.0	88.8
0.040000	23	0.8	2.1	2.170000	4	0.1	52.5	5.880000	3	0.1	74.5	13.280000	1	0.0	88.8
0.050000	4	0.1	2.2	2.200000	3	0.1	52.6	5.900000	2	0.1	74.6	13.300000	1	0.0	88.9
0.060000	23	0.8	3.0	2.210000	2	0.1	52.7	5.920000	1	0.0	74.6	13.400000	1	0.0	88.9
0.070000	10	0.3	3.3	2.220000	2	0.1	52.7	5.940000	2	0.1	74.7	13.440000	7	0.2	89.1
0.080000	11	0.4	3.7	2.240000	2	0.1	52.8	5.950000	1	0.0	74.7	13.450000	1	0.0	89.2
0.090000	1	0.0	3.7	2.250000	4	0.1	52.9	5.980000	1	0.0	74.8	13.500000	8	0.3	89.4
0.100000	24	0.8	4.6	2.280000	3	0.1	53.0	6.000000	15	0.5	75.3	13.680000	1	0.0	89.5
0.110000	3	0.1	4.7	2.300000	4	0.1	53.2	6.040000	1	0.0	75.3	13.720000	3	0.1	89.6
0.120000	18	0.6	5.3	2.310000	6	0.2	53.4	6.080000	1	0.0	75.4	13.760000	1	0.0	89.6
0.130000	11	0.4	5.7	2.340000	1	0.0	53.4	6.100000	2	0.1	75.4	13.800000	6	0.2	89.8
0.140000	21	0.7	6.4	2.380000	2	0.1	53.5	6.150000	2	0.1	75.5	13.860000	1	0.0	89.9
0.150000	1	0.0	6.4	2.400000	20	0.7	54.2	6.160000	1	0.0	75.5	13.940000	1	0.0	89.9
0.160000	9	0.3	6.7	2.440000	3	0.1	54.3	6.170000	1	0.0	75.6	14.000000	4	0.1	90.0
0.170000	14	0.5	7.2	2.460000	4	0.1	54.4	6.180000	1	0.0	75.6	14.130000	1	0.0	90.1
0.180000	6	0.2	7.4	2.480000	1	0.0	54.4	6.200000	1	0.0	75.6	14.280000	1	0.0	90.1
0.190000	2	0.1	7.5	2.490000	3	0.1	54.5	6.240000	1	0.0	75.7	14.300000	1	0.0	90.1

ECUB

VARIABLE NUMBER	3
NUMBER OF DISTINCT VALUES .	568
NUMBER OF VALUES COUNTED. .	2938
NUMBER OF VALUES NOT COUNTED	114

MAXIMUM	2.0000000
MINIMUM	0.0010000
RANGE	1.9990000
VARIANCE	0.1326385
ST.DEV.	0.3641956
(Q3-Q1)/2	0.1400000
MX.ST.SC.	4.76
MN.ST.SC.	-0.73

	ESTIMATE	ST. ERROR	95% CONFIDENCE LOWER	UPPER
MEAN	0.2664534	0.0067191	0.2532788	0.2796279
MEDIAN	0.1200000	0.0037528		
MODE	0.0360000			

EACH '-' ABOVE = 0.0750
L= 0.0000
U= 2.5500

CASE NO. OF MIN. VAL. = 665
CASE NO. OF MAX. VAL. = 1356

	VALUE	VALUE/S.E.
SKEWNESS	2.31	51.01
KURTOSIS	5.59	61.68

Q1= 0.0480000
Q3= 0.3200000
S-= -0.0977423
S+= 0.6306490

EACH '.' BELOW = 0.0200

VALUE	COUNT	PERCENTS CELL	CUM	VALUE	COUNT	PERCENTS CELL	CUM	VALUE	COUNT	PERCENTS CELL	CUM	VALUE	COUNT	PERCENTS CELL	CUM
0.0010000	33	1.1	1.1	0.1700000	7	0.2	58.7	0.4150000	1	0.0	80.0	0.8540000	1	0.0	92.2
0.0020000	23	0.8	1.9	0.1710000	3	0.1	58.8	0.4160000	1	0.0	80.1	0.8570000	1	0.0	92.2
0.0030000	20	0.7	2.6	0.1720000	2	0.1	58.9	0.4200000	7	0.2	80.3	0.8580000	2	0.1	92.3
0.0040000	25	0.9	3.4	0.1740000	4	0.1	59.1	0.4240000	2	0.1	80.4	0.8600000	1	0.0	92.3
0.0050000	15	0.5	3.9	0.1750000	1	0.0	59.1	0.4250000	1	0.0	80.4	0.8610000	1	0.0	92.4
0.0060000	26	0.9	4.8	0.1760000	16	0.5	59.6	0.4270000	1	0.0	80.4	0.8640000	1	0.0	92.4
0.0070000	7	0.2	5.1	0.1770000	2	0.1	59.7	0.4290000	2	0.1	80.5	0.8700000	1	0.0	92.4
0.0080000	17	0.6	5.7	0.1780000	2	0.1	59.8	0.4300000	1	0.0	80.5	0.8710000	1	0.0	92.5
0.0090000	13	0.4	6.1	0.1800000	22	0.7	60.5	0.4320000	3	0.1	80.6	0.8800000	1	0.0	92.5
0.0100000	35	1.2	7.3	0.1820000	6	0.2	60.7	0.4380000	1	0.0	80.7	0.8910000	3	0.1	92.6
0.0110000	31	1.1	8.3	0.1830000	4	0.1	60.9	0.4400000	5	0.2	80.8	0.8960000	1	0.0	92.6
0.0120000	15	0.5	8.8	0.1840000	3	0.1	61.0	0.4410000	1	0.0	80.9	0.9000000	2	0.1	92.7
0.0130000	30	1.0	9.9	0.1850000	6	0.2	61.2	0.4430000	2	0.1	80.9	0.9010000	1	0.0	92.8
0.0140000	21	0.7	10.6	0.1860000	3	0.1	61.3	0.4440000	1	0.0	81.0	0.9020000	2	0.1	92.8
0.0150000	23	0.8	11.4	0.1870000	2	0.1	61.3	0.4460000	1	0.0	81.0	0.9120000	1	0.0	92.9
0.0160000	13	0.4	11.8	0.1880000	2	0.1	61.4	0.4480000	4	0.1	81.1	0.9130000	1	0.0	92.9
0.0170000	21	0.7	12.5	0.1890000	3	0.1	61.5	0.4500000	22	0.7	81.9	0.9200000	1	0.0	92.9
0.0180000	25	0.9	13.4	0.1900000	3	0.1	61.6	0.4510000	3	0.1	82.0	0.9210000	1	0.0	93.0
0.0190000	7	0.2	13.6	0.1910000	1	0.0	61.6	0.4520000	1	0.0	82.0	0.9240000	1	0.0	93.0

TROSCOM PRICE

BIN LINES

PAGE 2 BMDP2D PRICE & WEIGHT & CUBE

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************
* EPRC     *
************
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VARIABLE NUMBER	1
NUMBER OF DISTINCT VALUES .	1702
NUMBER OF VALUES COUNTED. .	3050
NUMBER OF VALUES NOT COUNTED	2

MAXIMUM	83615.0000000
MINIMUM	0.0500000
RANGE	83614.9459998
VARIANCE	3469892.2744751
ST.DEV.	1862.7646850
(Q3-Q1)/2	76.3600000
MX.ST.SC.	44.72
MN.ST.SC.	-0.17

	ESTIMATE	ST.ERROR	95% CONFIDENCE LOWER	95% CONFIDENCE UPPER
MEAN	313.6120393	33.7293581	247.4774672	379.7466115
MEDIAN	55.2150000	2.6442655		
MODE	2.7800000			

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HHHHHH HH                            H
L-------------------------------------U
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EACH "H" REPRESENTS 299 COUNT(S)

EACH "-" ABOVE = 2500.0000

L= 0.0000

U= 85000.0000

CASE NO. OF MIN. VAL. = 2508

CASE NO. OF MAX. VAL. = 2872

	VALUE	VALUE/S.E.	
			Q1= 15.7000000
			Q3= 168.4200000
SKEWNESS	31.29	705.40	S-=-1549.1526464
KURTOSIS	1323.44	14919.35	S+= 2176.3767251

EACH "." BELOW = 750.0000

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 S Q  S
 - M  +
--I.....................................................................M
  N                                                                     A
                                                                        X
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VALUE	COUNT	PERCENTS CELL	PERCENTS CUM	VALUE	COUNT	PERCENTS CELL	PERCENTS CUM	VALUE	COUNT	PERCENTS CELL	PERCENTS CUM	VALUE	COUNT	PERCENTS CELL	PERCENTS CUM
-.50000E-01	1	0.0	0.0	20.490	1	0.0	30.2	66.900	1	0.0	53.3	183.70	1	0.0	77.2
.70000E-01	1	0.0	0.1	20.500	2	0.1	30.3	67.300	1	0.0	53.4	184.00	1	0.0	77.2
.80000E-01	1	0.0	0.1	20.510	1	0.0	30.3	67.500	2	0.1	53.4	184.36	1	0.0	77.2
0.14000	1	0.0	0.1	20.520	1	0.0	30.4	67.600	1	0.3	53.5	184.46	2	0.1	77.3
0.17000	3	0.1	0.2	20.540	2	0.1	30.4	67.700	4	0.1	53.6	185.22	2	0.1	77.4
0.20000	1	0.0	0.3	20.720	1	0.0	30.5	67.760	2	0.1	53.7	186.24	1	0.0	77.4
0.24000	1	0.0	0.3	20.900	1	0.0	30.5	68.120	2	0.1	53.7	186.63	3	0.1	77.5
0.26000	1	0.0	0.3	21.030	3	0.1	30.6	68.240	2	0.1	53.8	187.00	1	0.0	77.5
0.31000	2	0.1	0.4	21.200	2	0.1	30.7	68.510	1	0.0	53.8	187.20	1	0.0	77.6
0.33000	1	0.0	0.4	21.250	1	0.0	30.7	68.580	1	0.0	53.9	187.32	1	0.0	77.6
0.34000	2	0.1	0.5	21.340	2	0.1	30.8	68.860	1	0.0	53.9	187.98	1	0.0	77.6
0.36000	3	0.1	0.6	21.520	1	0.0	30.8	69.000	1	0.0	53.9	188.10	1	0.0	77.7
0.40000	5	0.2	0.8	21.700	1	0.0	30.8	65.100	1	0.0	54.0	188.76	1	0.0	77.7
0.50000	1	0.0	0.8	21.760	2	0.1	30.9	69.220	2	0.1	54.0	190.64	1	0.0	77.7
0.54000	1	0.0	0.8	21.780	3	0.1	31.0	65.450	1	0.0	54.1	191.00	1	0.0	77.8
0.58000	1	0.0	0.9	21.800	2	0.1	31.0	69.540	1	0.0	54.1	192.48	1	0.0	77.8
0.59000	1	0.0	0.9	21.860	1	0.0	31.1	69.580	3	0.1	54.2	193.00	1	0.0	77.8
0.62000	1	0.0	0.9	22.000	2	0.1	31.1	70.060	1	0.0	54.2	193.83	1	0.0	77.9
0.71000	1	0.0	1.0	22.050	1	0.0	31.2	70.100	1	0.3	54.3	193.90	1	0.0	77.9

****
* EDIT *
****

VARIABLE NUMBER 2
NUMBER OF DISTINCT VALUES . 244
NUMBER OF VALUES COUNTED. . 386
NUMBER OF VALUES NOT COUNTED 0

MAXIMUM 1080.0000000
MINIMUM 2.0000000
RANGE 1078.0000000
VARIANCE 25545.2137794
ST.DEV. 159.8287014
CG-COEF 54.7650000
MAX.ST.SC. 10.99
MIN.ST.SC. -0.76

	ESTIMATE	ST.ERROR	95% CONFIDENCE LOWER	UPPER
MEAN	123.5111140	8.1350667	107.5163946	139.5058333
MEDIAN	80.0000000	5.1961548		
MODE	60.0000000			

EACH '*' REPRESENTS 24 COUNT(S)

EACH '+' ABOVE = 100.0000
L= 0.0000
U= 2500.0000
CASE NO. OF MIN. VAL. = 161
CASE NO. OF MAX. VAL. = 319

	VALUE	VALUE/S.E.
SKEWNESS	5.75	46.14
KURTOSIS	49.27	197.60

Q1= 40.9500000
Q3= 150.4600000
S-= -36.3175874
S+= 283.3398154

EACH '.' BELOW = 15.0000

VALUE	COUNT	PERCENTS CELL	CUM	VALUE	COUNT	PERCENTS CELL	CUM	VALUE	COUNT	PERCENTS CELL	CUM	VALUE	COUNT	PERCENTS CELL	CUM
2.000	1	0.3	0.3	40.950	1	0.3	25.1	90.600	2	0.5	52.1	162.360	1	0.3	77.5
2.300	1	0.3	0.5	41.000	1	0.3	25.4	81.000	1	0.3	52.3	164.000	1	0.3	77.7
2.640	1	0.3	0.8	41.340	1	0.3	25.6	82.530	1	0.3	52.6	164.950	1	0.3	78.0
3.750	1	0.3	1.0	41.500	1	0.3	25.9	83.600	1	0.3	52.8	166.750	1	0.3	78.2
4.000	1	0.3	1.3	41.600	1	0.3	26.2	85.000	1	0.3	53.1	167.200	2	0.5	78.8
5.000	1	0.3	1.6	41.800	2	0.5	26.7	86.920	1	0.3	53.4	168.900	1	0.3	79.0
6.000	1	0.3	1.8	42.000	1	0.3	26.9	87.320	1	0.3	53.6	171.380	1	0.3	79.3
8.000	2	0.5	2.3	42.640	1	0.3	27.2	87.780	1	0.3	53.9	174.240	1	0.3	79.5
8.900	1	0.3	2.6	43.460	1	0.3	27.5	88.900	1	0.3	54.1	176.000	1	0.3	79.8
9.100	1	0.3	2.8	44.000	1	0.3	27.7	90.000	4	1.0	55.2	178.750	1	0.3	80.1
9.250	4	1.0	3.9	44.320	1	0.3	28.0	91.700	3	0.8	56.0	179.500	1	0.3	80.3
9.750	1	0.3	4.1	45.200	1	0.3	28.2	92.000	4	1.0	57.0	180.000	3	0.8	81.1
10.500	2	0.5	4.7	45.980	1	0.3	28.5	93.100	1	0.3	57.3	190.250	1	0.3	81.3
12.000	1	0.3	4.9	46.000	6	1.6	30.1	94.500	1	0.3	57.5	182.250	1	0.3	81.6
14.000	1	0.3	5.2	46.330	1	0.3	30.3	97.240	1	0.3	57.8	184.000	5	1.3	82.9
14.790	2	0.5	5.7	46.900	1	0.3	30.6	98.000	1	0.3	58.0	185.000	1	0.3	83.2
16.800	1	0.3	6.0	47.230	1	0.3	30.8	100.000	11	2.8	60.9	189.000	1	0.3	83.4
18.000	1	0.3	6.2	47.250	1	0.3	31.1	100.320	1	0.3	61.1	191.000	1	0.3	83.7
20.000	3	0.8	7.0	47.500	2	0.5	31.6	101.100	1	0.3	61.4	200.000	4	1.0	84.7
20.900	1	0.3	7.3	49.500	1	0.3	31.9	101.250	1	0.3	61.7	203.000	1	0.3	85.0

****
* ECUB A
****

VARIABLE NUMBER 3
NUMBER OF DISTINCT VALUES . 267
NUMBER OF VALUES COUNTED. . 386
NUMBER OF VALUES NOT COUNTED 0

MAXIMUM 38.7840000
MINIMUM 0.2240000
RANGE 38.5600000
VARIANCE 73.0388399
ST.DEV. 8.5462764
(G3-G1)/2 4.7410000
MX.ST.DC. 3.41
MN.ST.DC. -1.0E

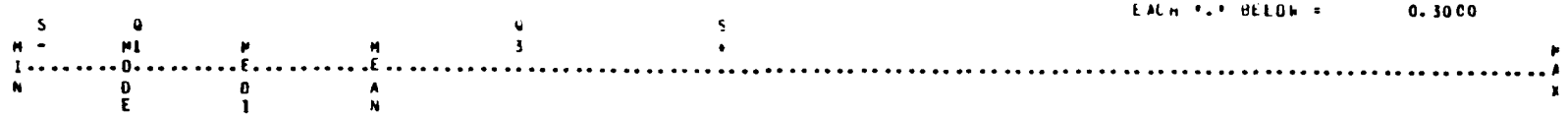
	ESTIMATE	ST.ERROR	95% CONFIDENCE LOWER	UPPER
MEAN	9.2448472	0.4365940	8.3895359	10.1001084
MEDIAN	6.0000000	0.4044341		
MODE	3.0000000			

EACH '-' ABOVE = 2.0000
L= 0.0000
U= 50.0000
CASE NO. OF MIN. VAL. = 244
CASE NO. OF MAX. VAL. = 66

	VALUE	VALUE/S.E.
SKEWNESS	1.57	12.59
KURTOSIS	1.84	7.40

Q1= 3.1390000
Q3= 12.6210000
S-= 0.6985708
S+= 17.7911235

EACH '.' BELOW = 0.3000



VALUE	COUNT	PERCENTS CELL	CUM	VALUE	COUNT	PERCENTS CELL	CUM	VALUE	COUNT	PERCENTS CELL	CUM	VALUE	COUNT	PERCENTS CELL	CUM
0.2240	1	0.3	0.3	3.1360	1	0.3	24.9	5.5000	1	0.3	47.4	12.2740	1	0.3	74.6
0.2380	1	0.3	0.5	3.1390	1	0.3	25.1	5.5200	2	0.5	47.9	12.3210	1	0.3	74.9
0.2520	1	0.3	0.8	3.1600	1	0.3	25.4	5.6700	1	0.3	49.2	12.6210	1	0.3	75.1
0.2800	1	0.3	1.0	3.1980	1	0.3	25.6	5.7820	1	0.3	48.4	12.6270	1	0.3	75.4
0.5880	1	0.3	1.3	3.2040	1	0.3	25.9	5.8640	1	0.3	49.7	12.6490	4	1.0	76.4
1.5920	1	0.3	1.6	3.2200	1	0.3	26.2	5.9740	1	0.3	49.0	12.8000	1	0.3	76.7
1.7660	1	0.3	1.8	3.2300	1	0.3	26.4	5.9860	1	0.3	49.2	12.8520	1	0.3	76.9
1.8620	1	0.3	2.1	3.2320	2	0.5	26.9	6.0000	12	3.1	52.3	12.8700	1	0.3	77.2
2.0370	4	1.0	3.1	3.2370	1	0.3	27.2	6.0100	2	0.5	52.8	12.9280	3	0.8	78.0
2.0400	1	0.3	3.4	3.2400	3	0.8	28.0	6.0760	1	0.3	53.1	12.9640	1	0.3	78.2
2.0470	2	0.5	3.9	3.2490	1	0.3	28.2	6.1070	1	0.3	53.4	13.6530	1	0.3	78.5
2.0500	1	0.3	4.1	3.2500	1	0.3	28.5	6.1150	3	0.8	54.1	14.0000	3	0.8	79.3
2.0700	1	0.3	4.4	3.2600	1	0.3	28.8	6.2000	1	0.3	54.4	14.4240	1	0.3	79.5
2.1000	1	0.3	4.7	3.4000	2	0.5	29.3	6.4010	1	0.3	54.7	14.5410	2	0.5	80.1
2.1160	1	0.3	4.9	3.4300	1	0.3	29.5	6.4080	1	0.3	54.9	14.6520	1	0.3	80.3
2.1240	1	0.3	5.2	3.4710	1	0.3	29.8	6.4640	3	0.8	55.7	14.9200	1	0.3	80.6
2.1280	1	0.3	5.4	3.4760	1	0.3	30.1	6.6000	1	0.3	56.0	14.9420	1	0.3	80.8
2.1450	1	0.3	5.7	3.5000	1	0.3	30.3	6.6110	1	0.3	56.2	14.9500	1	0.3	81.1
2.1560	1	0.3	6.0	3.5060	1	0.3	30.6	6.6740	1	0.3	56.5	15.0000	1	0.3	81.3
2.1600	1	0.3	6.2	3.5150	1	0.3	30.8	6.7980	1	0.3	56.7	15.0640	1	0.3	81.6

TROSCOM PRICE

PAGE 2 UPDF2C PRICE & WEIGHT & CODE

RACK ITEMS

```
************
* EFRC     *
************

VARIABLE NUMBER . . . . . .        1      MAXIMUM    147903.0000000
NUMBER OF DISTINCT VALUES .      286      MINIMUM        25.0000000
NUMBER OF VALUES COUNTED. .      386      RANGE      147493.0000000
NUMBER OF VALUES NOT COUNTED       0      VARIANCE 79970427.4318848
                                          ST.DEV.      8942.6186004
                                          (Q3-Q1)/2     396.3000000
                                          MX.ST.SC.          16.32
                                          MN.ST.SC.          -0.21

                                               95% CONFIDENCE
          ESTIMATE        ST.ERROR          LOWER           UPPER
MEAN    1529.8736010   455.1873024   1034.9487629   2424.7984392
MEDIAN   464.1750000    24.8145261
MODE     201.0000000
```

```
H
H
H
H                                    EACH 'H'
H                                    REPRESENTS
H                                        SE
H                                    COUNT(S)
H
H
H
HHH H H                  H
L-------------------------U

                EACH '-' ABOVE =     7500.0000
                             L =        0.0000
                             U =   187500.0000
        CASE NO. OF MIN. VAL. =   302
        CASE NO. OF MAX. VAL. =   382

                                               Q1=  201.0000000
                   VALUE   VALUE/S.E.          Q3=  993.6000000
SKEWNESS           12.46        99.95          S-=-7012.7449993
KURTOSIS          186.71       748.77          S+=10872.4922014

                EACH '.' BELOW =     1500.0000

S   Q    S
-   MP   +                                              M
.....IE.................................................A
    NA                                                  X
     N
```

VALUE	COUNT	PERCENTS CELL	CUM	VALUE	COUNT	PERCENTS CELL	CUM	VALUE	COUNT	PERCENTS CELL	CUM	VALUE	COUNT	PERCENTS CELL	CUM
25.00	1	0.3	0.3	228.08	1	0.3	28.2	438.00	2	0.5	54.4	1018.00	1	0.3	76.2
28.90	1	0.3	0.5	225.60	5	1.3	29.5	488.56	1	0.3	54.7	1024.00	1	0.3	76.4
35.28	1	0.3	0.8	231.20	1	0.3	29.8	496.00	1	0.3	54.9	1032.00	1	0.3	76.7
55.18	1	0.3	1.0	234.24	1	0.3	30.1	496.44	1	0.3	55.2	1040.16	1	0.3	76.9
56.30	6	1.6	2.6	235.53	1	0.3	30.3	499.40	1	0.3	55.4	1092.00	1	0.3	77.2
56.42	1	0.3	2.8	238.14	1	0.3	30.6	502.00	1	0.3	55.7	1099.00	2	0.5	77.7
68.88	4	1.0	3.9	245.10	1	0.3	30.8	519.00	1	0.3	56.0	1103.05	1	0.3	78.0
72.25	1	0.3	4.1	245.52	1	0.3	31.1	535.00	1	0.3	56.2	1134.72	2	0.5	78.5
75.50	1	0.3	4.4	245.70	1	0.3	31.3	543.72	1	0.3	56.5	1156.00	1	0.3	78.8
76.50	1	0.3	4.7	247.32	1	0.3	31.6	549.34	1	0.3	56.7	1206.00	1	0.3	79.0
88.35	1	0.3	4.9	247.69	1	0.3	31.9	551.04	2	0.5	57.3	1256.00	2	0.5	79.5
91.84	6	1.6	6.5	248.00	2	0.5	32.4	555.66	1	0.3	57.5	1261.08	1	0.3	79.8
93.86	1	0.3	6.7	252.36	1	0.3	32.6	564.96	1	0.3	57.8	1304.00	4	1.0	80.8
97.50	1	0.3	7.0	258.64	1	0.3	32.9	567.36	1	0.3	58.0	1317.00	2	0.5	81.3
100.10	1	0.3	7.3	263.25	1	0.3	33.2	592.02	1	0.3	58.3	1342.00	1	0.3	81.6
104.16	1	0.3	7.5	264.60	1	0.3	33.4	595.12	1	0.3	58.5	1350.00	1	0.3	81.9
107.90	1	0.3	7.8	268.45	1	0.3	33.7	595.51	2	0.5	59.1	1359.00	1	0.3	82.1
112.60	1	0.3	8.0	274.80	3	0.8	34.5	595.66	1	0.3	59.3	1401.20	2	0.5	82.6
114.80	2	0.5	8.5	278.00	2	0.5	35.0	596.70	1	0.3	59.6	1407.00	1	0.3	82.9
117.32	1	0.3	8.8	282.48	1	0.3	35.2	601.90	1	0.3	59.8	1413.00	1	0.3	83.2

TROSCOM WEIGHT

BULK ITEMS

PAGE 3 BMDP2D PRICE & WEIGHT & CUBE

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************
* EWGT     *
************

VARIABLE NUMBER . . . . . . .        2      MAXIMUM          3910.0000000
NUMBER OF DISTINCT VALUES .         33      MINIMUM           260.0000000
NUMBER OF VALUES COUNTED. .         42      RANGE            3650.0000000
NUMBER OF VALUES NOT COUNTED         0      VARIANCE      1093908.4633141
                                            ST.DEV.          1045.9007904
                                            (Q3-Q1)/2         589.0000000
                                            MX.ST.SC.           2.67
                                            MN.ST.SC.          -0.82

                                                 95% CONFIDENCE
           ESTIMATE        ST.ERROR         LOWER           UPPER
MEAN     1119.9304762    161.3859957    794.0048626    1445.6560898
MEDIAN    593.5000000    181.2800691
MODE      NOT UNIQUE
```

```
H
H
H
H                                 EACH "H"
H                                 REPRESENTS
H                                     2
H                                 COUNT(S)
HH H
HH H  H
HHHHHHH  HHH HH
L---------------U

          EACH "-" ABOVE =      250.0000
                      L=        250.0000
                      U=       4250.0000
CASE NO. OF MIN. VAL. =    11
CASE NO. OF MAX. VAL. =     5
```

```
                                                              Q1=   340.0000000
                      VALUE    VALUE/S.E.                     Q3=  1518.0000000
SKEWNESS               1.31        3.47                       S-=    74.0296856
KURTOSIS               0.51        0.68                       S+=  2165.6312666

                                                  EACH "." BELOW =      30.0000
S   Q                                  
-  M 1      M          M         Q          S
    I       E          E         3          +                                          M
.....I.......E..........E.................................................................A
    N       D          A                                                               X
            I          N
```

VALUE	COUNT	PERCENTS CELL	PERCENTS CUM	VALUE	COUNT	PERCENTS CELL	PERCENTS CUM	VALUE	COUNT	PERCENTS CELL	PERCENTS CUM	VALUE	COUNT	PERCENTS CELL	PERCENTS CUM
260.0	1	2.4	2.4	460.0	1	2.4	40.5	1020.0	1	2.4	61.9	2739.0	1	2.4	88.1
280.0	2	4.8	7.1	500.0	1	2.4	42.9	1060.0	1	2.4	64.3	2980.0	1	2.4	90.5
320.0	4	9.5	16.7	520.0	1	2.4	45.2	1150.0	1	2.4	66.7	3140.0	1	2.4	92.9
323.2	1	2.4	19.0	533.3	1	2.4	47.6	1212.2	1	2.4	69.0	3546.0	1	2.4	95.2
340.0	4	9.5	28.6	560.0	1	2.4	50.0	1220.0	1	2.4	71.4	3586.0	1	2.4	97.6
380.0	1	2.4	31.0	627.0	1	2.4	52.4	1304.0	1	2.4	73.8	3910.0	1	2.4	100.0
400.0	1	2.4	33.3	736.0	1	2.4	54.8	1518.0	1	2.4	76.2				
420.0	1	2.4	35.7	752.4	1	2.4	57.1	1564.0	1	2.4	78.6				
440.0	1	2.4	38.1	920.0	1	2.4	59.5	1986.0	3	7.1	85.7				

TROSCOM CUBE

BULK ITEMS

PAGE 4 BMDP2D PRICE & WEIGHT & CUBE

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************
* ECUB     *
************
```

VARIABLE NUMBER	3	MAXIMUM	507.4240000
NUMBER OF DISTINCT VALUES .	33	MINIMUM	42.0160000
NUMBER OF VALUES COUNTED. .	42	RANGE	465.4080000
NUMBER OF VALUES NOT COUNTED	0	VARIANCE	13373.9724135
		ST.DEV.	115.6458923
		(Q3-Q1)/2	25.0000000
		MX.ST.SC.	3.42
		MN.ST.SC.	-0.61

	ESTIMATE	ST.ERROR	95% CONFIDENCE LOWER	95% CONFIDENCE UPPER
MEAN	112.3869762	17.8445486	76.3491810	148.4247715
MEDIAN	68.8485000	5.5979908		
MODE	NOT UNIQUE			

```
H
HH                      EACH 'H'
HH                      REPRESENTS
HH                          2
HH                      COUNT(S)
HH
HHH
HHHHHH      HH  H
L-----------------U
```

EACH '-' ABOVE = 30.0000
L= 30.0000
U= 510.0000
CASE NO. OF MIN. VAL. = 11
CASE NO. OF MAX. VAL. = 28

	VALUE	VALUE/S.E.		
			Q1=	52.0000000
			Q3=	102.0000000
SKEWNESS	2.37	6.26	S-=	-3.2569161
KURTOSIS	4.50	5.95	S+=	228.0328685

EACH '.' BELOW = 5.0000

```
S       Q     M      Q          S                                                        M
-     M 1     E    3 M          +                                                        A
---------I.....E........E..........................................................................A
        N     D       A                                                                  X
        N     I       N
```

VALUE	COUNT	PERCENTS CELL	CUM	VALUE	COUNT	PERCENTS CELL	CUM	VALUE	COUNT	PERCENTS CELL	CUM	VALUE	COUNT	PERCENTS CELL	CUM
42.02	1	2.4	2.4	63.49	3	7.1	45.2	83.79	1	2.4	66.7	164.80	1	2.4	88.1
45.25	2	4.8	7.1	64.64	1	2.4	47.6	84.00	1	2.4	69.0	197.15	1	2.4	90.5
47.10	1	2.4	9.5	67.87	1	2.4	50.0	90.50	1	2.4	71.4	378.07	1	2.4	92.9
47.71	1	2.4	11.9	69.83	1	2.4	52.4	96.94	1	2.4	73.8	412.00	1	2.4	95.2
48.47	1	2.4	14.3	71.10	1	2.4	54.8	102.00	1	2.4	76.2	481.57	1	2.4	97.6
51.71	4	9.5	23.8	75.46	1	2.4	57.1	114.66	1	2.4	78.6	507.42	1	2.4	100.0
52.00	1	2.4	26.2	77.55	1	2.4	59.5	121.10	1	2.4	81.0				
54.94	4	9.5	35.7	77.72	1	2.4	61.9	135.00	1	2.4	83.3				
61.41	1	2.4	38.1	80.80	1	2.4	64.3	159.95	1	2.4	85.7				

NUMBER OF INTEGER WORDS OF STORAGE USED IN PRECEDING PROBLEM 1014
CPU TIME USED IN PRECEDING PROBLEM 12.167 SECONDS
CUMULATIVE CPU TIME USED 12.167 SECONDS

TROSCOM PRICE

BULK ITEMS

PAGE 2 BMDP2D PRICE & WEIGHT & CUBE

```
************
* EPRC     *
************

VARIABLE NUMBER . . . . . .        1
NUMBER OF DISTINCT VALUES .       33
NUMBER OF VALUES COUNTED. .       42
NUMBER OF VALUES NOT COUNTED       0

MAXIMUM     103155.0000000
MINIMUM       1193.9200000
RANGE       101961.0799599
VARIANCE  ****************
ST.DEV.      16307.6697586
(Q3-Q1)/2     3805.0000000
MX.ST.SC.        5.72
MN.ST.SC.       -0.53

            ESTIMATE       ST.ERROR          95% CONFIDENCE
                                           LOWER          UPPER
MEAN      9024.9247619   2516.3280736   4743.0973822  14906.7521415
MEDIAN    4623.5000000   1446.2630586
MODE       NOT UNIQUE
```

```
H
H
H
H
H                          EACH "H"
HH                         REPRESENTS
HH                             1
HH H                       COUNT(S)
HHHH        H
L---------------U

EACH "-" ABOVE =     7500.0000
             L=         0.0000
             U=    120000.0000
CASE NO. OF MIN. VAL. =  40
CASE NO. OF MAX. VAL. =  34

                   VALUE   VALUE/S.E.     Q1= 2669.0000000
SKEWNESS            4.51      11.92       Q3=10279.0000000
KURTOSIS           22.65      29.96       S-=-6482.7449967
                                          S+=26132.5945205

EACH "." BELOW =     1000.0000

S    Q   Q        S
-  M I M  M       +
------I---E----E..........................................................M
   N  D   A                                                               A
      E   N                                                               X
```

VALUE	COUNT	PERCENTS CELL	PERCENTS CUM	VALUE	COUNT	PERCENTS CELL	PERCENTS CUM	VALUE	COUNT	PERCENTS CELL	PERCENTS CUM	VALUE	COUNT	PERCENTS CELL	PERCENTS CUM
1194.	1	2.4	2.4	3260.	1	2.4	40.5	6520.	1	2.4	61.9	17692.	1	2.4	88.1
2041.	1	2.4	4.8	3297.	1	2.4	42.9	8150.	1	2.4	64.3	25393.	1	2.4	90.5
2198.	2	4.8	9.5	3454.	1	2.4	45.2	9577.	1	2.4	66.7	24649.	1	2.4	92.9
2342.	1	2.4	11.9	3925.	1	2.4	47.6	10150.	1	2.4	69.0	25428.	1	2.4	95.2
2512.	4	9.5	21.4	4396.	1	2.4	50.0	10279.	3	7.1	76.2	27710.	1	2.4	97.6
2669.	4	9.5	31.0	4851.	1	2.4	52.4	10641.	1	2.4	78.6	103155.	1	2.4	100.0
2940.	1	2.4	33.3	5216.	1	2.4	54.8	10758.	1	2.4	81.0				
2983.	1	2.4	35.7	5250.	1	2.4	57.1	11004.	1	2.4	83.3				
3148.	1	2.4	38.1	6300.	1	2.4	59.5	13194.	1	2.4	85.7				

APPENDIX C

FACILITY COST ANALYSIS

The sheets included in Appendix C represent computer printouts of a VISICALC program used to estimate facility sizes and costs. A separate sheet is provided for each location within each alternative and for both high and low estimates. The top line on each sheet identifies the alternative, the facility, and the estimate boundary.

FACILITY COSTS

OPTION B CENTRAL EUROPE
HIGH ESTIMATE

STORAGE BIN	CMD	LNS/PD	LNS/PKG	PKG/PD	CF/LN	CF/PKG	CF/OPN	OPN/PKG	OPNS	E-FAC	T-OPNS	BINS	AISLES	WIDTH	LENGTH	T-SQFT
	AMCCOM	960	9	107	.19	1.71	5.25	1	107	.85	125					
	AVSCOM	876	684	1	.29	175.16	5.25	34	49	.85	58					
	CECOM	10556	49	215	.19	9.31	5.25	2	431	.85	507					
	MICOM	7459	584	13	.24	140.16	5.25	28	358	.85	421					
	TACOM	6345	30	212	0.40	12.00	5.25	3	635	.85	746					
	TROSCOM	586	423	1	.27	114.21	5.25	10	14	.85	16					
	SUB-TOT	26782		549					1593		1874	468	15	102.479	68	6969

BULK	CMD	LNS/PD	WT/LN	LBS/TON	TONS	SQF/TON	N-GROSS	T-SQFT
	AMCCOM	5	1429	2000	3.57	1	1	4
	AVSCOM	20	832.25	2000	8.32	19.6	.52	314
	CECOM	25	4028.24	2000	50.35	1	1	50
	MICOM	168	478.99	2000	40.24	17.3	.65	1071
	TACOM	413	4217.9	2000	871.00	12	.55	19004
	TROSCOM	8	1119.93	2000	4.48	1	1	4
	SUB-TOT	639			977.96			20447

RACK	CMD	LNS/PD	E-FAC	OPNS	COLMNS	L-ASLE	AISLES	WIDTH	LENGTH	T-SQFT
	AMCCOM	89	.85	105						
	AVSCOM	121	.85	142						
	CECOM	1164	.85	1369						
	MICOM	1117	.85	1314						
	TACOM	2543	.85	2992						
	TROSCOM	77	.85	91						
	SUB-TOT	5111	.85	6013	1503	155	25	431	155	62134

OTHER	TYPE	T-SQFT
	CONVEYER	1000
	OFFICE	4477
	REC/SHP	8955

SUMMARY		T-SQFT
		103981

FACILITY COSTS	T-SQFT	STD	C/SQFT	SRF	ACFI	PINDEX	F-COST	C-FAC	SPV/ADM	T-COST
	103981	40000	35	.95	.96	1	3319078	1.05	1.05	3659283

EQUIP COSTS		RACKS	BINS		CONVEY	VEHICLE	CARTS	T-COST
		360775	79641		512493	90000	8000	1050811

TOTAL COSTS	GRTOTAL
	4710094

FACILITY COSTS

OPTION B CENTRAL EUROPE
LOW ESTIMATE

STORAGE BIN	CMD	LNS/PD	LNS/PKG	PKG/PD	CF/LN	CF/PKG	CF/OPN	OPN/PKG	OPNS	C-FAC	T-OPNS	BINS	AISLES	WIDTH	LENGTH	T-SQFT
	AMCCOM	960	9	107	.04	0.36	5.25	1	107	.85	125					
	AVSCOM	876	604	1	.12	72.48	5.25	34	49	.85	58					
	CECOM	10556	49	215	.05	2.45	5.25	2	431	.85	507					
	MICOM	7459	584	13	.12	70.08	5.25	28	358	.85	421					
	TACOM	6345	30	212	0.19	5.70	5.25	3	635	.85	746					
	TROSCOM	586	423	1	.12	50.76	5.25	10	14	.85	16					
	SUB-TOT	26782		549					1593		1874	468	15	102.479	68	6969

BULK	CMD	LNS/PD	WT/LN	LBS/TON	TONS	SQF/TON	N-CROSS	T-SQFT
	AMCCOM	5	634.52	2000	1.59	1	1	2
	AVSCOM	20	640.00	2000	6.40	19.6	.52	241
	CECOM	25	2450.50	2000	30.63	1	1	31
	MICOM	168	384.00	2000	32.26	17.3	.65	859
	TACOM	413	2336.00	2000	482.38	12	.55	10525
	TROSCOM	8	593.50	2000	2.37	1	1	2
	SUB-TOT	639			555.63			11659

RACK	CMD	LNS/PD	L-FAC	OPNS	COLMNS	L-ASLE	AISLES	WIDTH	LENGTH	T-SQFT
	AMCCOM	89	.85	105						
	AVSCOM	121	.85	142						
	CECOM	1164	.85	1369						
	MICOM	1117	.85	1314						
	TACOM	2543	.85	2992						
	TROSCOM	77	.85	91						
	SUB-TOT	5111	.85	6013	1503	155	25	401	155	62134

OTHER	TYPE	T-SQFT
	CONVEYER	1000
	OFFICE	4038
	REC/SHP	6076

SUMMARY

T-SQFT 93876

FACILITY	T-SQFT	STD	C/SQFT	SRF	ACFI	PINDEX	F-COST	C-FAC	SPV/ADM	T-COST
COSTS	93876	40000	35	.95	.96	1	2996508	1.05	1.05	3304650

EQUIP		RACKS	BINS		CONVEY	VEHICLE	CARTS	T-COST
COSTS		360776	79641		512393	90000	8000	1050811

TOTAL	GRTOTAL
COSTS	4316576

FACILITY COSTS

OPTION C PRIED
HIGH ESTIMATE

STORAGE	CMD	LNS/PD	LNS/PKG	PKG/PD	CF/LN	CF/PKG	CF/OPN	OPN/PKG	OPNS	E-FAC	T-OPNS	BINS	AISLES	WIDTH	LENGTH	T-SQFT
BIN	AMCCOM	0	9	0	.19	1.71	5.25	1	0	.85	0					
	AVSCOM	0	684	0	.29	175.16	5.25	34	0	.85	0					
	CECOM	13300	49	271	.19	9.31	5.25	2	543	.85	639					
	MICOM	2256	584	4	.24	140.16	5.25	28	108	.85	127					
	TACOM	0	30	0	0.40	12.00	5.25	3	0	.85	0					
	TROSCOM	738	423	2	.27	114.21	5.25	10	17	.85	21					
	SUB-TOT	16294		277					668		786	197	6	43.0081	68	2929

BULK	CMD	LNS/PD	WT/LN	LNS/TON	TONS	SQFT/TON	N-GROSS	T-SQFT
	AMCCOM	0	1429	2000	0.00	1	1	0
	AVSCOM	3	832.25	2000	0.00	19.6	.52	0
	CECOM	31	4028.24	2000	62.44	1	1	62
	MICOM	51	478.99	2000	12.21	17.3	.65	325
	TACOM	0	4217.9	2000	0.00	12	.55	0
	TROSCOM	11	1119.93	2000	6.16	1	1	6
	SUB-TOT	93			80.81			394

RACK	CMD	LNS/PD	E-FAC	OPNS	COLMNS	L-AISLE	AISLES	WIDTH	LENGTH	T-SQFT
	AMCCOM	0	.85	0						
	AVSCOM	0	.85	0						
	CECOM	1467	.85	1726						
	MICOM	338	.85	398						
	TACOM	0	.85	0						
	TROSCOM	97	.85	114						
	SUB-TOT	1902	.85	2238	559	155	9	149	155	23122

OTHER	TYPE	T-SQFT
	CONVEYER	1000
	OFFICE	1322
	REC/SHP	2644

SUMMARY

	T-SQFT
	31407

FACILITY COSTS	T-SQFT	STD	C/SQFT	SRF	ACTI	PINDEX		F-COST	C-FAC	SPV/ADM	T-COST
	31407	40000	35	.95	.96	1		1002501	1.05	1.05	1105257
EQUIP COSTS		RACKS	BINS		CONVEY	VEHICLE	CARTS	T-COST			
		134259	33423		215040	90000	8000	480723			
TOTAL COSTS								GRTOTAL			
								1585980			

FACILITY COSTS

OPTION C DRILD
LOX ESTIMATE

STORAGE	CMD	LNS/PD	LNS/PKG	PKG/PD	CF/LN	CF/PKG	CF/OPN	OPN/PKG	OPNS	E-FAC	T-OPNS	BINS	AISLES	WIDTH	LENGTH	T-SQFT
BIN	AMCCOM	0	9	0	.04	0.36	5.25	1	0	.85	0					
	AVSCOM	0	604	0	.12	72.48	5.25	34	0	.85	0					
	CECOM	13300	49	271	.05	2.45	5.25	2	543	.85	639					
	MICOM	2256	584	4	.12	70.08	5.25	28	108	.85	127					
	TACOM	3	30	0	0.19	5.70	5.25	3	0	.85	0					
	TROSCOM	738	423	2	.12	50.76	5.25	10	17	.85	21					
	SUB-TOT	16294		277					668		786	197	6	43.0081	68	2925

BULK	CMD	LNS/PD	WT/LN	LBS/TON	TONS	SQF/TON	N-GROSS	T-SQFT
	AMCCOM	0	634.52	2000	0.00	1	1	0
	AVSCOM	0	640.00	2000	0.00	19.6	.52	0
	CECOM	31	2450.50	2000	37.98	1	1	38
	MICOM	51	384.00	2000	9.79	17.3	.65	261
	TACOM	0	2336.00	2000	0.00	12	.55	0
	TROSCOM	11	593.50	2000	3.26	1	1	3
	SUB-TOT	93			51.04			302

RACK	CMD	LNS/PD	E-FAC	OPNS	COLMNS	L-ASLE	AISLES	WIDTH	LENGTH	T-SQFT
	AMCCOM	0	.85	0						
	AVSCOM	0	.85	0						
	CECOM	1467	.85	1726						
	MICOM	338	.85	398						
	TACOM	0	.85	0						
	TROSCOM	97	.85	114						
	SUB-TOT	1902	.85	2238	559	155	9	149	155	23122

OTHER	TYPE	T-SQFT
	CONVEYER	1000
	OFFICE	1317
	REC/SHP	2635

SUMMARY

											T-SQFT
FACILITY	T-SQFT	STD	C/SQFT	SRF	ACFT	PINDEX	F-COST	C-FAC	SPV/ADM	T-COST	31301
COSTS	31301	40000	35	.95	.96	1	999131	1.05	1.05	1101541	

EQUIP	RACKS	BINS	CONVEY	VEHICLE	CARTS	T-COST	
COSTS	134259	34421	215040	90000	6000	480723	

TOTAL	
COSTS	GRTOTAL
	1587045

FACILITY COSTS

OPTION C MAINZ E EUROPE
HIGH ESTIMATE

STORAGE BIN	CMD	LBS/PD	LNS/PKG	PKG/PD	CF/LN	CF/PKG	CF/OPN	OPN/PKG	OPNS	F-FAC	T-OPNS	BINS	AISLES	WIDTH	LENGTH	T-SQFT
	AMCCOM	1209	9	134	.19	1.71	5.25	1	134	.85	158					
	AVSCOM	0	604	0	.29	175.16	5.25	34	0	.85	0					
	CECOM	0	49	0	.19	9.31	5.25	2	0	.85	0					
	MICOM	0	584	0	.24	140.16	5.25	28	0	.85	0					
	TACOM	2798	30	93	0.40	12.00	5.25	3	280	.85	329					
	TROSCOM	0	423	0	.27	114.21	5.25	10	0	.85	0					
	SUB-TOT	4007		228					414		487	122	4	26.6446	68	1812

BULK	CMD	LNS/PD	WT/LN	LBS/TON	TONS	SQF/TON	N-GROSS	T-SQFT
	AMCCOM	7	1429	2000	5.00	1	1	5
	AVSCOM	0	832.25	2000	0.00	19.6	.52	0
	CECOM	0	4028.24	2000	0.00	1	1	0
	MICOM	0	478.99	2000	0.00	17.3	.65	0
	TACOM	182	4217.90	2000	383.83	12	.55	8374
	TROSCOM	0	1119.93	2000	0.00	1	1	0
	SUB-TOT	189			388.83			8379

RACK	CMD	LNS/PD	F-FAC	OPNS	COLMNS	L-ASLE	AISLES	WIDTH	LENGTH	T-SQFT
	AMCCOM	113	.85	133						
	AVSCOM	0	.85	0						
	CECOM	0	.85	0						
	MICOM	0	.85	0						
	TACOM	1121	.85	1319						
	TROSCOM	0	.85	0						
	SUB-TOT	1234	.85	1452	363	155	6	97	155	15002

OTHER	TYPE	T-SQFT
	CONVEYER	1000
	OFFICE	1260
	REC/SHP	2519

SUMMARY

											T-SQFT
FACILITY	T-SQFT	STD	C/SQFT	SRF	ACFT	PINDEX		F-COST	C-FAC	SPV/ADM	T-COST
COSTS	29972	40000	35	.95	.96	1		956699	1.05	1.05	1054761

EQUIP		RACKS	BINS	CONVEY	VEHICLE	CARTS	T-COST
COSTS		87106	20707	133223	90000	8000	339036

TOTAL COSTS	GRTOTAL
	1431680

FACILITY COSTS

OPTION C MAINZ
LOW ESTIMATE

STORAGE	CMD	LNS/PD	LNS/PKG	PKG/PD	CF/LN	CF/PKG	CF/OPN	OPN/PKG	OPNS	E-FAC	T-OPNS	BINS	AISLES	WIDTH	LENGTH	T-SQFT
BIN	AMCCOM	1209	9	134	.04	0.36	5.25	1	134	.85	158					
	AVSCOM	0	604	0	.12	72.48	5.25	34	0	.85	0					
	CECOM	0	49	0	.05	2.45	5.25	2	0	.85	0					
	MICOM	0	584	0	.12	70.08	5.25	28	0	.85	0					
	TACOM	2798	30	93	0.19	5.70	5.25	3	280	.85	329					
	TROSCOM	0	423	0	.12	50.76	5.25	10	0	.85	0					
	SUB-TOT	4007		228					414		487	122	4	26.6446	68	1812

BULK	CMD	LNS/PD	WT/LN	LBS/TON	TONS	SQF/TON	N-GROSS	T-SQFT
	AMCCOM	7	634.52	2000	2.22	1	1	2
	AVSCOM	0	640.00	2000	0.00	19.6	.52	0
	CECOM	0	2450.50	2000	0.00	1	1	0
	MICOM	0	384.00	2000	0.00	17.3	.65	0
	TACOM	182	2336.00	2000	212.58	12	.55	4638
	TROSCOM	0	593.50	2000	0.00	1	1	0
	SUB-TOT	189			214.80			4640

RACK	CMD	LNS/PD	E-FAC	OPNS	COLMNS	L-ASLE	AISLES	WIDTH	LENGTH	T-SQFT
	AMCCOM	113	.85	133						
	AVSCOM	0	.85	0						
	CECOM	0	.85	0						
	MICOM	0	.85	0						
	TACOM	1121	.85	1319						
	TROSCOM	0	.85	0						
	SUB-TOT	1234	.85	1452	363	155	6	97	155	15002

OTHER	TYPE	T-SQFT
	CONVEYER	1000
	OFFICE	1073
	REC/SHP	2145

SUMMARY

T-SQFT
25672

FACILITY	T-SQFT	STD	C/SQFT	SRF	ACFT	PINDEX		F-COST	C-FAC	SPV/ADM	T-COST
COSTS	25672	40000	35	.95	.96	1		819440	1.05	1.05	903433

EQUIP		RACKS	BINS		CONVEY	VEHICLE	CARTS	T-COST
COSTS		87106	20707		133223	90000	8000	339036

TOTAL	GRTOTAL
COSTS	1290192

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APPENDIX D

OPERATING COST ANALYSIS

The sheets included in Appendix D represent printouts of a VISICALC program used to estimate operating hours and costs. A separate sheet is provided for each location within each alternative and for both high and low estimates.

OPERATING COSTS

OPTIONS A&B CENTRAL SITE
HIGH ESTIMATE

ANNUAL LINES	AMCCOM 3411	AVSCOM 3297	CECOM 39149	MICOM 29144	TACOM 31000	TROSCOM 2336	TOTAL 108337

BIN %	CMD	LNS/PD	LNS/PKG	PKG/PD	CF/LN	CF/PKG	WT/LN	WT/PKG	T-MTON	T-STON
0.91	AMCCOM	3104	9	345	.186	1.67	4.13	.37	14	6
0.86	AVSCOM	2835	604	5	.289	174.56	3.99	2410	20	6
0.90	CECOM	35234	49	719	.187	9.16	5.31	260	165	94
0.85	MICOM	24772	584	42	.244	142.50	3.35	1956	151	41
0.68	TACOM	21080	30	703	.396	11.88	11.11	333	209	117
0.87	TROSCOM	2032	423	5	.12	50.76	5.23	2212	6	5
	SUB-TOT	89058		1819					566	270

BULK %	CMD	LNS/PD	WT/LN	CF/LN	T-MTON	T-STON
0.01	AMCCOM	34	1429.00	115.76	99	24
0.02	AVSCOM	66	832.25	115.83	191	27
0.00	CECOM	0	4028.24	102.36	0	0
0.02	MICOM	583	478.99	84.34	1229	140
0.04	TACOM	1240	4217.90	156.79	4860	2615
0.01	TROSCOM	23	1119.93	112.38	66	13
	SUB-TOT	1946			6445	2820

RACK %	CMD	LNS/PD	WT/LN	CF/LN	T-MTON	T-STON
0.09	AMCCOM	307	113.03	7.20	55	17
0.12	AVSCOM	396	74.74	7.37	73	15
0.10	CECOM	3915	209.88	5.58	546	411
0.13	MICOM	3789	89.26	7.36	697	169
0.27	TACOM	8370	198.72	8.34	1745	832
0.11	TROSCOM	257	123.51	9.24	59	16
	SUB-TOT	17033			3176	1460

SUMMARY

	ANNUAL LINES	ANNUAL PKGS	SHORT TONS	WORK STD	TASK FACTOR	MAN HOURS	AREA RATE	COST HOUR	DIRECT COSTS	ADMIN COSTS	TOTAL COSTS
RECIEVE	108038	1819	4549	1.3	2	11827	1	30.33	358699	35870	394569
INSPECT	108038	1819	4549	.3	1	32411	1	30.33	983035	98304	1081339
STORE	108038	1819	4549	.4	2	3639	1	30.33	110369	11037	121406
INVENTOR	108038	1819	4549	.2	2	43215	1	30.33	1310714	131071	1441785
PACK	108038	1819	4549	.5	2	1819	1	30.33	55156	5516	60672
SHIP	108038	1819	4549	1.7	1	7733	1	30.33	234534	23453	257988
TOTAL						100643			3052508	305251	3357759

RECEIVE, STORE, &SHIP IN HOURS PER SHORT TON
INSPECT, INVENTORY AND PACKING IN HOURS PER LINE

OPERATING COSTS

OPTIONS A&B CENTRAL SITE
LOW ESTIMATE

ANNUAL LINES	AMCCOM 3411	AVSCOM 3297	CECOM 39149	MICOM 29144	TACOM 31000	TROSCOM 2336	TOTAL 108337

BIN %	CMD	LNS/PD	LNS/PKG	PKG/PD	CF/LN	CF/PKG	WT/LN	WT/PKG	T-MTON	T-STON
0.91	AMCCOM	3104	9	345	.042	0.38	.85	8	3	1
0.86	AVSCOM	2835	604	5	.124	74.90	1.74	1051	9	2
0.90	CECOM	35234	49	719	.053	2.60	1.15	56	47	20
0.85	MICOM	24772	584	42	.123	71.83	1.4	818	76	17
0.68	TACOM	21080	30	703	.186	5.58	5.32	160	98	56
0.87	TROSCOM	2032	423	5	.266	112.52	1.96	829	14	2
	SUB-TOT	89058		1819					246	99

BULK %	CMD	LNS/PD	WT/LN	CF/LN	T-MTON	T-STON
0.01	AMCCOM	34	634.51	115.76	99	11
0.02	AVSCOM	66	640.00	115.83	191	21
0.00	CECOM	0	2450.50	102.36	0	0
0.02	MICOM	583	384.00	84.34	1229	112
0.04	TACOM	1240	2336.00	156.79	4860	1448
0.01	TROSCOM	23	593.50	112.38	66	7
	SUB-TOT	1946			6445	1599

RACK %	CMD	LNS/PD	WT/LN	CF/LN	T-MTON	T-STON
0.09	AMCCOM	307	74.50	4.45	34	11
0.12	AVSCOM	396	41.10	4.69	46	8
0.10	CECOM	3915	100.00	3.59	351	196
0.13	MICOM	378	57.50	4.49	425	109
0.27	TACOM	8370	106.38	5.05	1057	445
0.11	TROSCOM	257	80.00	6.00	39	10
	SUB-TOT	17033			1952	780

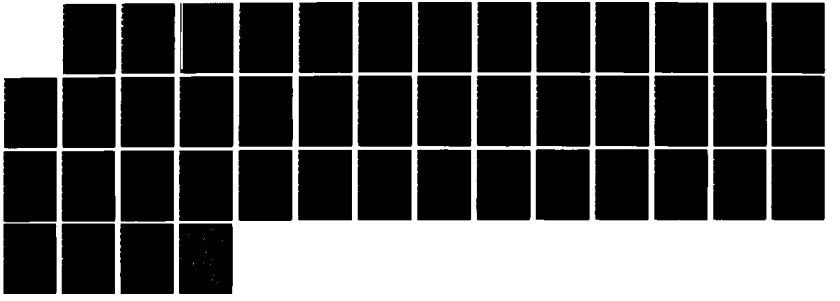
SUMMARY

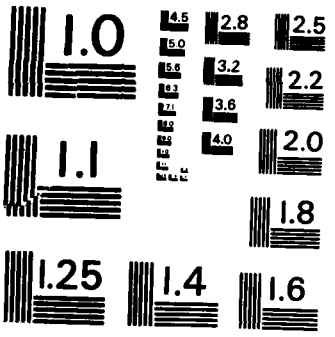
	ANNUAL LINES	ANNUAL PKGS	SHORT TONS	WORK STD	TASK FACTOR	MAN HOURS	AREA RATE	COST HOUR	DIRECT COSTS	ADMIN COSTS	TOTAL COSTS
RECIEVE	108038	1819	2478	1.3	2	6443	1	30.33	195430	19543	214973
INSPECT	108038	1819	2478	.3	1	32411	1	30.33	983035	98304	1081339
STORE	108038	1819	2478	.4	2	1983	1	30.33	60132	6013	66146
INVENTOR	108038	1819	2478	.2	2	43215	1	30.33	1310714	131071	1441785
PACK	108038	1819	2478	.5	2	1819	1	30.33	55156	5516	60672
SHIP	108038	1819	2478	1.7	1	4213	1	30.33	127781	12778	140559
TOTAL						90084			2732249	273225	3005474

RECEIVE, STORE, &SHIP IN HOURS PER SHORT TON
INSPECT, INVENTORY AND PACKING IN HOURS PER LINE

AD-A166 619 UNIT MATERIEL FIELDING POINT EUROPE(U) LOGISTICS STUDIES OFFICE (ARMY) FORT LEE VA D DRYDEN ET AL. OCT 85 3/3

UNCLASSIFIED F/G 15/5 NL





OPERATING COSTS

OPTIONS C NCAD
HIGH ESTIMATE

ANNUAL LINES	AMCCOM	AVSCOM	CECOM	MICOM	TACOM	TROSCOM	TOTAL
	0	3297	0	22149	20150	0	45596

BIN %	CMD	LNS/PD	LNS/PKG	PKG/PD	CF/LN	CF/PKG	WT/LN	WT/PKG	T-MTON	T-STON
0.91	AMCCOM	0	9	0	.186	1.67	4.13	37	0	0
0.86	AVSCOM	2835	604	5	.289	174.56	3.99	2410	20	6
0.90	CECOM	0	49	0	.187	9.16	5.31	260	0	0
0.85	MICOM	18827	584	32	.244	142.50	3.35	1956	115	32
0.68	TACOM	13702	30	457	.396	11.88	11.11	333	136	76
0.87	TROSCOM	0	423	0	.12	50.76	5.23	2212	0	0
	SUB-TOT	35364		494					271	113

BULK %	CMD	LNS/PD	WT/LN	CF/LN	T-MTON	T-STON
0.01	AMCCOM	0	1429.00	115.76	0	0
0.02	AVSCOM	66	832.25	115.83	191	27
0.00	CECOM	0	4028.24	102.36	0	0
0.02	MICOM	443	478.99	84.34	934	106
0.04	TACOM	806	4217.90	156.79	3159	1700
0.01	TROSCOM	0	1119.93	112.38	0	0
	SUB-TOT	1315			4284	1833

RACK %	CMD	LNS/PD	WT/LN	CF/LN	T-MTON	T-STON
0.09	AMCCOM	0	113.03	7.20	0	0
0.12	AVSCOM	396	74.74	7.37	73	15
0.10	CECOM	0	209.88	5.58	0	0
0.13	MICOM	2879	89.26	7.36	530	129
0.27	TACOM	5441	198.72	8.34	1134	541
0.11	TROSCOM	0	123.51	9.24	0	0
	SUB-TOT	8716			1737	684

SUMMARY

	ANNUAL LINES	ANNUAL PKGS	SHORT TONS	WORK STD	TASK FACTOR	MAN HOURS	AREA RATE	COST HOUR	DIRECT COSTS	ADMIN COSTS	TOTAL COSTS
RECIEVE	45395	494	2631	1.3	2	6839	1	30.33	207437	20744	228180
INSPECT	45395	494	2631	.3	1	13618	1	30.33	413045	41304	454349
STORE	45395	494	2631	.4	2	2104	1	30.33	63827	6383	70209
INVENTOR	45395	494	2631	.2	2	18158	1	30.33	550726	55073	605799
PACK	45395	494	2631	.5	2	494	1	30.33	14973	1497	16470
SHIP	45395	494	2631	1.7	1	4472	1	30.33	135632	13563	149195
TOTAL						45685			1385639	138564	1524203

RECEIVE,STORE, &SHIP IN HOURS PER SHORT TON
INSPECT,INVENTORY AND PACKING IN HOURS PER LINE

OPERATING COSTS

OPTION C NCAD
LOW ESTIMATE

ANNUAL LINES	AMCCOM	AVSCOM	CECOM	MICOM	TACOM	TROSCOM	TOTAL
	0	3297	0	22149	20150	0	45596

BIN %	CMD	LNS/PD	LNS/PKG	PKG/PD	CF/LN	CF/PKG	WT/LN	WT/PKG	T-MTON	T-STON
0.91	AMCCOM	0	9	0	.042	0.38	.85	8	0	0
0.86	AVSCOM	2835	604	5	.124	74.90	1.74	1051	9	2
0.90	CECOM	0	49	0	.053	2.60	1.15	56	0	0
0.85	MICOM	18827	584	32	.123	71.83	1.4	818	58	13
0.68	TACOM	13702	30	457	.186	5.58	5.32	160	64	36
0.87	TROSCOM	0	423	0	.266	112.52	1.96	829	0	0
	SUB-TOT	35364		494					130	52

BULK %	CMD	LNS/PD	WT/LN	CF/LN	T-MTON	T-STON
0.01	AMCCOM	0	634.51	115.76	0	0
0.02	AVSCOM	66	640.00	115.83	191	21
0.00	CECOM	0	2450.50	102.36	0	0
0.02	MICOM	443	384.00	84.34	934	85
0.04	TACOM	806	2336.00	156.79	3159	941
0.01	TROSCOM	0	593.50	112.38	0	0
	SUB-TOT	1315			4284	1048

RACK %	CMD	LNS/PD	WT/LN	CF/LN	T-MTON	T-STON
0.09	AMCCOM	0	74.50	4.45	0	0
0.12	AVSCOM	396	41.10	4.69	46	8
0.10	CECOM	0	100.00	3.59	0	0
0.13	MICOM	2879	57.50	4.49	323	83
0.27	TACOM	5441	106.38	5.05	687	289
0.11	TROSCOM	0	80.00	6.00	0	0
	SUB-TOT	8716			1056	380

SUMMARY

	ANNUAL LINES	ANNUAL PKGS	SHORT TONS	WORK STD	TASK FACTOR	MAN HOURS	AREA RATE	COST HOUR	DIRECT COSTS	ADMIN COSTS	TOTAL COSTS
RECIEVE	45395	494	1480	1.3	2	3848	1	30.33	116706	11671	128376
INSPECT	45395	494	1480	.3	1	13618	1	30.33	413045	41304	454349
STORE	45395	494	1480	.4	2	1184	1	30.33	35909	3591	39500
INVENTOR	45395	494	1480	.2	2	18158	1	30.33	550726	55073	605799
PACK	45395	494	1480	.5	2	494	1	30.33	14973	1497	16470
SHIP	45395	494	1480	1.7	1	2516	1	30.33	76308	7631	83938
TOTAL						39818			1207666	120767	1328433

RECEIVE,STORE, &SHIP IN HOURS PER SHORT TON
INSPECT,INVENTORY AND PACKING IN HOURS PER LINE

OPERATING COSTS

OPTIONS C FRIEDRICHSFELD
HIGH ESTIMATE

ANNUAL LINES	AMCCOM	AVSCOM	CECOM	MICOM	TACOM	TROSCOM	TOTAL
	0	0	39149	6995	0	2336	48480

BIN %	CMD	LNS/PD	LNS/PKG	PKG/PD	CF/LN	CF/PKG	WT/LN	WT/PKG	T-MTON	T-STON
0.91	AMCCOM	0	9	0	.186	1.67	4.13	37	0	0
0.86	AVSCOM	0	604	0	.289	174.56	3.99	2410	0	0
0.90	CECOM	35234	49	719	.187	9.16	5.31	260	165	94
0.85	MICOM	5946	584	10	.244	142.50	3.35	1956	36	10
0.68	TACOM	0	30	0	.396	11.88	11.11	333	0	0
0.87	TROSCOM	2032	423	5	.12	50.76	5.23	2212	6	5
	SUB-TOT	43212		734					207	109

BULK %	CMD	LNS/PD	WT/LN	CF/LN	T-MTON	T-STON
0.01	AMCCOM	0	1429.00	115.76	0	0
0.02	AVSCOM	0	832.25	115.83	0	0
0.00	CECOM	0	4028.24	102.36	0	0
0.02	MICOM	140	478.99	84.34	295	34
0.04	TACOM	0	4217.90	156.79	0	0
0.01	TROSCOM	23	1119.93	112.38	66	13
	SUB-TOT	163			361	47

RACK %	CMD	LNS/PD	WT/LN	CF/LN	T-MTON	T-STON
0.09	AMCCOM	0	113.03	7.20	0	0
0.12	AVSCOM	0	74.74	7.37	0	0
0.10	CECOM	3915	209.88	5.58	546	411
0.13	MICOM	909	89.26	7.36	167	41
0.27	TACOM	0	198.72	8.34	0	0
0.11	TROSCOM	257	123.51	9.24	59	16
	SUB-TOT	5081			773	467

SUMMARY

	ANNUAL LINES	ANNUAL PKGS	SHORT TONS	WORK STD	TASK FACTOR	MAN HOURS	AREA RATE	COST HOUR	DIRECT COSTS	ADMIN COSTS	TOTAL COSTS
RECIEVE	48457	734	623	1.3	1	809	1	30.33	24552	2455	27007
INSPECT	48457	734	623	.3	1	14537	1	30.33	440907	44091	484998
STORE	48457	734	623	.4	1	249	1	30.33	7554	755	8310
INVENTOR	48457	734	623	.2	1	9691	1	30.33	293938	29394	323332
PACK	48457	734	623	.5	1	367	1	30.33	11132	1113	12245
SHIP	48457	734	623	1.7	0	0	1	30.33	0	0	0
TOTAL						25654			778083	77808	855892

RECEIVE, STORE, &SHIP IN HOURS PER SHORT TON
INSPECT, INVENTORY AND PACKING IN HOURS PER LINE

OPERATING COSTS

OPTION C FRIEDRICHSFELD
LOW ESTIMATE

ANNUAL LINES	AMCCOM	AVSCOM	CECOM	MICOM	TACOM	TROSCOM	TOTAL
	0	0	39149	6995	0	2336	48480

BIN %	CMD	LNS/PD	LNS/PKG	PKG/PD	CF/LN	CF/PKG	WT/LN	WT/PKG	T-MTON	T-STON
0.91	AMCCOM	0	9	0	.042	0.38	.85	8	0	0
0.86	AVSCOM	0	604	0	.124	74.90	1.74	1051	0	0
0.90	CECOM	35234	49	719	.053	2.60	1.15	56	47	20
0.85	MICOM	5946	584	10	.123	71.83	1.4	818	18	4
0.68	TACOM	0	30	0	.186	5.58	5.32	160	0	0
0.87	TROSCOM	2032	423	5	.266	112.52	1.96	829	14	2
	SUB-TOT	43212		734					78	26

BULK %	CMD	LNS/PD	WT/LN	CF/LN	T-MTON	T-STON
0.01	AMCCOM	0	634.51	115.76	0	0
0.02	AVSCOM	0	640.00	115.83	0	0
0.00	CECOM	0	2450.50	102.36	0	0
0.02	MICOM	140	384.00	84.34	295	27
0.04	TACOM	0	2336.00	156.79	0	0
0.01	TROSCOM	23	593.50	112.38	66	7
	SUB-TOT	163			361	34

RACK %	CMD	LNS/PD	WT/LN	CF/LN	T-MTON	T-STON
0.09	AMCCOM	0	74.50	4.45	0	0
0.12	AVSCOM	0	41.10	4.69	0	0
0.10	CECOM	3915	100.00	3.59	351	196
0.13	MICOM	909	57.50	4.49	102	26
0.27	TACOM	0	106.38	5.05	0	0
0.11	TROSCOM	257	80.00	6.00	39	10
	SUB-TOT	5081			492	232

SUMMARY

	ANNUAL LINES	ANNUAL PKGS	SHORT TONS	WORK STD	TASK FACTOR	MAN HOURS	AREA RATE	COST HOUR	DIRECT COSTS	ADMIN COSTS	TOTAL COSTS
RECIEVE	48457	734	292	1.3	1	380	1	30.33	11528	1153	12681
INSPECT	48457	734	292	.3	1	14537	1	30.33	440907	44091	484998
STORE	48457	734	292	.4	1	117	1	30.33	3547	355	3902
INVENTOR	48457	734	292	.2	1	9691	1	30.33	293938	29394	323332
PACK	48457	734	292	.5	1	367	1	30.33	11132	1113	12245
SHIP	48457	734	292	1.7	0	0	1	30.33	0	0	0
TOTAL						25092			761052	76105	837157

RECEIVE,STORE, &SHIP IN HOURS PER SHORT TON
INSPECT,INVENTORY AND PACKING IN HOURS PER LINE

OPERATING COSTS

OPTIONS C MAINZ
HIGH ESTIMATE

ANNUAL LINES	AMCCOM 3411	AVSCOM 0	CECOM 0	MICOM 0	TACOM 10850	TROSCOM 0	TOTAL 14261

BIN %	CMD	LNS/PD	LNS/PKG	PKG/PD	CF/LN	CF/PKG	WT/LN	WT/PKG	T-MTON	T-STON
0.91	AMCCOM	3104	9	345	.186	1.67	4.13	37	14	6
0.86	AVSCOM	0	604	0	.289	174.56	3.99	2410	0	0
0.90	CECOM	0	49	0	.187	9.16	5.31	.260	0	0
0.85	MICOM	0	584	0	.244	142.50	3.35	1956	0	0
0.68	TACOM	7378	30	246	.396	11.88	11.11	333	73	41
0.87	TROSCOM	0	423	0	.12	50.76	5.23	2212	0	0
	SUB-TOT	10482		591					87	47

BULK %	CMD	LNS/PD	WT/LN	CF/LN	T-MTON	T-STON
0.01	AMCCOM	34	1429.00	115.76	99	24
0.02	AVSCOM	0	832.25	115.83	0	0
0.00	CECOM	0	4028.24	102.36	0	0
0.02	MICOM	0	478.99	84.34	0	0
0.04	TACOM	434	4217.90	156.79	1701	915
0.01	TROSCOM	0	1119.93	112.38	0	0
	SUB-TOT	468			1800	940

RACK %	CMD	LNS/PD	WT/LN	CF/LN	T-MTON	T-STON
0.09	AMCCOM	307	113.03	7.20	55	17
0.12	AVSCOM	0	74.74	7.37	0	0
0.10	CECOM	0	209.88	5.58	0	0
0.13	MICOM	0	89.26	7.36	0	0
0.27	TACOM	2930	198.72	8.34	611	291
0.11	TROSCOM	0	123.51	9.24	0	0
	SUB-TOT	3236			666	308

SUMMARY

	ANNUAL LINES	ANNUAL PKGS	SHORT TONS	WORK STD	TASK FACTOR	MAN HOURS	AREA RATE	COST HOUR	DIRECT COSTS	ADMIN COSTS	TOTAL COSTS
RECIEVE	14187	591	1295	1.3	1	1684	1	30.33	51079	5108	56187
INSPECT	14187	591	1295	.3	1	4256	1	30.33	129084	12908	141992
STORE	14187	591	1295	.4	1	518	1	30.33	15717	1572	17288
INVENTOR	14187	591	1295	.2	1	2837	1	30.33	86056	8606	94662
PACK	14187	591	1295	.5	1	295	1	30.33	8960	896	9856
SHIP	14187	591	1295	1.7	0	0	1	30.33	0	0	0
TOTAL						9591			290896	29090	319985

RECEIVE, STORE, &SHIP IN HOURS PER SHORT TON
INSPECT, INVENTORY AND PACKING IN HOURS PER LINE

OPERATING COSTS

OPTION C MAINZ
LOW ESTIMATE

ANNUAL LINES	AMCCOM 3411	AVSCOM 0	CECOM 0	MICOM 0	TACOM 10850	TROSCOM 0	TOTAL 14261			
BIN %	CMD	LNS/PD	LNS/PKG	PKG/PD	CF/LN	CF/PKG	WT/LN	WT/PKG	T-MTON	T-STON
0.91	AMCCOM	3104	9	345	.042	0.38	.85	8	3	1
0.86	AVSCOM	0	604	0	.124	74.90	1.74	1051	0	0
0.90	CECOM	0	49	0	.053	2.60	1.15	56	0	0
0.85	MICOM	0	584	0	.123	71.83	1.4	818	0	0
0.68	TACOM	7378	30	246	.186	5.58	5.32	160	34	20
0.87	TROSCOM	0	423	0	.266	112.52	1.96	829	0	0
	SUB-TOT	10482		591					38	21
BULK %	CMD	LNS/PD	WT/LN	CF/LN					T-MTON	T-STON
0.01	AMCCOM	34	634.51	115.76					99	11
0.02	AVSCOM	0	640.00	115.83					0	0
0.00	CECOM	0	2450.50	102.36					0	0
0.02	MICOM	0	384.00	84.34					0	0
0.04	TACOM	434	2336.00	156.79					1701	507
0.01	TROSCOM	0	593.50	112.38					0	0
	SUB-TOT	468							1800	518
RACK %	CMD	LNS/PD	WT/LN	CF/LN					T-MTON	T-STON
0.09	AMCCOM	307	74.50	4.45					34	11
0.12	AVSCOM	0	41.10	4.69					0	0
0.10	CECOM	0	100.00	3.59					0	0
0.13	MICOM	0	57.50	4.49					0	0
0.27	TACOM	2930	106.38	5.05					370	156
0.11	TROSCOM	0	80.00	6.00					0	0
	SUB-TOT	3236							404	167

SUMMARY

	ANNUAL LINES	ANNUAL PKGS	SHORT TONS	WORK STD	TASK FACTOR	MAN HOURS	AREA RATE	COST HOUR	DIRECT COSTS	ADMIN COSTS	TOTAL COSTS
RECIEVE	14187	591	706	1.3	1	918	1	30.33	27834	2783	30618
INSPECT	14187	591	706	.3	1	4256	1	30.33	129084	12908	141992
STORE	14187	591	706	.4	1	282	1	30.33	8564	856	9421
INVENTOR	14187	591	706	.2	1	2837	1	30.33	86056	8606	94662
PACK	14187	591	706	.5	1	295	1	30.33	8960	896	9856
SHIP	14187	591	706	1.7	0	0	1	30.33	0	0	0
TOTAL						8589			260498	26050	286548

RECEIVE,STORE, &SHIP IN HOURS PER SHORT TON
INSPECT,INVENTORY AND PACKING IN HOURS PER LINE

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APPENDIX E

TRANSPORTATION COST ANALYSIS

The enclosed listings represent printouts of a VISICALC program used to estimate transportation workload and costs. A separate sheet is provided for each location within each alternative and for both high and low estimates.

TRANSPORTATION COSTS
HIGH ESTIMATE

OPTION A NCAD

ANNUAL LINES	AMCCOM 3411	AVSCOM 3297	CECOM 39149	MICOM 29144	TACOM 31000	TROSCOM 2336	TOTAL 108337					
BIN %	CMD	LINES	LNS/PKG	PKGS	CF/LN	CF/PKG	WT/LN	WT/PKG	T-MTON	T-STON	T-PLLTS	T-CTNS
0.91	AMCCOM	3104	9	345	.186	1.67	4.13	37	14	6	3	0
0.86	AVSCOM	2835	604	5	.289	174.56	3.99	2410	20	6	3	1
0.90	CECOM	35234	49	719	.187	9.16	5.31	260	165	94	62	4
0.85	MICOM	24772	584	42	.244	142.50	3.35	1956	151	41	28	4
0.68	TACOM	21080	30	703	.396	11.88	11.11	333	209	117	78	5
0.87	TROSCOM	2032	423	5	.12	50.76	5.23	2212	6	5	4	0
	SUB-TOT	89058		1819					566	270	177	14
BULK %	CMD	LINES	WT/LN	CF/LN								
0.01	AMCCOM	34	1429.00	115.76					99	24	16	2
0.02	AVSCOM	66	832.25	115.83					191	27	18	5
0.00	CECOM	0	4028.24	102.36					0	0	0	0
0.02	MICOM	583	478.99	84.34					1229	140	93	31
0.04	TACOM	1240	4217.90	156.79					4860	2615	1743	122
0.01	TROSCOM	23	1119.93	112.38					66	13	9	2
	SUB-TOT	1946							6445	2820	1880	161
RACK %	CMD	LINES	WT/LN	CF/LN								
0.09	AMCCOM	307	113.03	7.20					55	17	12	1
0.12	AVSCOM	396	74.74	7.37					73	15	10	2
0.10	CECOM	3915	209.88	5.58					546	411	274	14
0.13	MICOM	3789	89.26	7.36					697	169	113	17
0.27	TACOM	8370	198.72	8.34					1745	832	554	44
0.11	TROSCOM	257	123.51	9.24					59	16	11	1
	SUB-TOT	17023							3176	1460	973	79

COSTS	TOTAL S-TONS	TOTAL M-TONS	TOTAL PLLTS	TOTAL CTNS	LOAD RATE	TO POE	POE-POD	POD-FRK	LOAD COSTS	MOVE COSTS	TOTAL COSTS
MAC	4549	10186	3030	255	0	0	2140	0	0	9734162	9734162
SEA	4549	10186	3030	255	3.05	0	56.71	0	31068	577661	608729
ALOC	0	0	0	0	19.63	22.77	102	0	0	0	0
SUB TOT	4549	10186	3030	255					31068	577661	608729

SEA COST IN $ PER M-TON
MAC&ALOC COSTS IN $ PER S-TON

TRANSPORTATION COSTS
LOW ESTIMATE

OPTION A NCAD

ANNUAL LINES	AMCCOM 3411	AVSCOM 3297	CECOM 39149	MICOM 29144	TACOM 31000	TROSCOM 2336	TOTAL 108337					
BIN %	CMD	LINES	LNS/PKG	PKGS	CF/LN	CF/PKG	WT/LN	WT/PKG	T-MTON	T-STON	T-PLLTS	T-CTNS
0.91	AMCCOM	3104	9	345	.042	0.38	0.85	8	3	1	1	0
0.86	AVSCOM	2835	604	5	.124	74.90	1.74	1051	9	2	1	0
0.90	CECOM	35234	49	719	.053	2.60	1.15	56	47	20	14	1
0.85	MICOM	24772	584	42	.123	71.83	1.40	818	76	17	12	2
0.68	TACOM	21080	30	703	.186	5.58	5.32	160	98	56	37	2
0.87	TROSCOM	2032	423	5	.266	112.52	1.96	829	14	2	1	0
	SUB-TOT	89058		1819					246	99	65	6
BULK %	CMD	LINES	WT/LN	CF/LN								
0.01	AMCCOM	34	634.51	115.76					99	11	7	2
0.02	AVSCOM	66	640.00	115.83					191	21	14	5
0.00	CECOM	0	2450.50	102.36					0	0	0	0
0.02	MICOM	583	384.00	84.34					1229	112	75	31
0.04	TACOM	1240	2336.00	156.79					4860	1448	966	122
0.01	TROSCOM	23	593.50	112.38					66	7	5	2
	SUB-TOT	1946							6445	1599	1066	161
RACK %	CMD	LINES	WT/LN	CF/LN								
0.09	AMCCOM	307	74.50	4.45					34	11	8	1
0.12	AVSCOM	396	41.10	4.69					46	8	5	1
0.10	CECOM	3915	100.00	3.59					351	196	130	9
0.13	MICOM	3789	57.50	4.49					425	109	73	11
0.27	TACOM	8370	106.38	5.05					1057	445	297	26
0.11	TROSCOM	257	80.00	6.00					39	10	7	1
	SUB-TOT	17033							1952	780	520	49

COSTS	TOTAL S-TONS	TOTAL M-TONS	TOTAL PLLTS	TOTAL CTNS	LOAD RATE	TO POE	POE-POD	POD-FRK	LOAD COSTS	MOVE COSTS	TOTAL COSTS
MAC	2478	8644	1651	216	0	0	2140	0	0	5303462	5303462
SEA	2478	8644	1651	216	3.05	4.01	24.87	3.53	26363	280141	306505
ALOC	0	0	0	0	19.63	22.77	102	0	0	0	0
SUB TOT	2478	8644	1651	216					26363	280141	306505

SEA COST IN $ PER M-TON
MAC&ALOC COSTS IN $ PER S-TON

TRANSPORTATION COSTS
HIGH ESTIMATE

OPTION B CENTRAL

ANNUAL LINES	AMCCOM 3411	AVSCOM 3297	CECOM 39149	MICOM 29144	TACOM 31000	TROSCOM 2336	TOTAL 108337					
BIN %	CMD	LINES	LNS/PKG	PKGS	CF/LN	CF/PKG	WT/LN	WT/PKG	T-MTON	T-STON	T-PLLTS	T-CTNS
0.91	AMCCOM	3104	9	345	.186	1.67	4.13	37	14	6	3	0
0.86	AVSCOM	2835	604	5	.289	174.56	3.99	2410	20	6	3	1
0.90	CECOM	35234	49	719	.187	9.16	5.31	260	165	94	62	4
0.85	MICOM	24772	584	42	.244	142.50	3.35	1956	151	41	28	4
0.68	TACOM	21080	30	703	.396	11.88	11.11	333	209	117	78	5
0.87	TROSCOM	2032	423	5	.12	50.76	5.23	2212	6	5	4	0
	SUB-TOT	89058		1819					566	270	177	14
BULK %	CMD	LINES	WT/LN	CF/LN								
0.01	AMCCOM	34	1429.00	115.76					99	24	16	2
0.02	AVSCOM	66	832.25	115.83					191	27	18	5
0.00	CECOM	0	4028.24	102.36					0	0	0	0
0.02	MICOM	583	478.99	84.34					1229	140	93	31
0.04	TACOM	1240	4217.90	156.79					4860	2615	1743	122
0.01	TROSCOM	23	1119.93	112.38					66	13	9	2
	SUB-TOT	1946							6445	2820	1880	161
RACK %	CMD	LINES	WT/LN	CF/LN								
0.09	AMCCOM	307	113.03	7.20					55	17	12	1
0.12	AVSCOM	396	74.74	7.37					73	15	10	2
0.13	CECOM	3915	209.88	5.58					546	411	274	14
0.13	MICOM	3789	89.26	7.36					697	169	113	17
0.27	TACOM	8370	198.72	8.34					1745	832	554	44
0.11	TROSCOM	257	123.51	9.24					59	16	11	1
	SUB-TOT	17033							3176	1460	973	79

COSTS	TOTAL S-TONS	TOTAL M-TONS	TOTAL PLLTS	TOTAL CTNS	LOAD RATE	TO POE	POE-POD	POD-FRK	LOAD COSTS	MOVE COSTS	TOTAL COSTS
MAC	4549	10186	3030	255	0	0	2140	0	0	9734162	9734162
SEA	2820	6445	1880	161	3.05	0	56.71	0	19657	365484	385140
ALOC	1729	3741	1151	94	19.63	22.77	102	0	33942	215738	249680
SUB TOT	4549	10186	3030	255					53599	581222	634820

SEA COST IN $ PER M-TON
MAC&ALOC COSTS IN $ PER S-TON

TRANSPORTATION COSTS
LOW ESTIMATE

OPTION B CENTRAL

ANNUAL LINES	AMCCOM 3411	AVSCOM 3297	CECOM 39149	MICOM 29144	TACOM 31000	TROSCOM 2336	TOTAL 108337					
BIN %	CMD	LINES	LNS/PKG	PKGS	CF/LN	CF/PKG	WT/LN	WT/PKG	T-MTON	T-STON	T-PLTS	T-CTNS
0.91	AMCCOM	3104	9	345	.042	0.38	0.85	8	3	1	1	0
0.86	AVSCOM	2835	604	5	.124	74.90	1.74	1051	9	2	1	0
0.90	CECOM	35234	49	719	.053	2.60	1.15	56	47	20	14	1
0.85	MICOM	24772	584	42	.123	71.83	1.40	818	76	17	12	2
0.68	TACOM	21080	30	703	.186	5.58	5.32	160	98	56	37	2
0.87	TROSCOM	2032	423	5	.266	112.52	1.96	829	14	2	1	0
	SUB-TOT	89058		1819					246	99	65	6
BULK %	CMD	LINES	WT/LN	CF/LN								
0.01	AMCCOM	34	634.51	115.76					99	11	7	2
0.02	AVSCOM	66	640.00	115.83					191	21	14	5
0.00	CECOM	0	2450.50	102.36					0	0	0	0
0.02	MICOM	583	384.00	84.34					1229	112	75	31
0.04	TACOM	1240	2336.00	156.79					4860	1448	966	122
0.01	TROSCOM	23	593.50	112.38					66	7	5	2
	SUB-TOT	1946							6445	1599	1066	161
RACK %	CMD	LINES	WT/LN	CF/LN								
0.09	AMCCOM	307	74.50	4.45					34	11	8	1
0.12	AVSCOM	396	41.10	4.69					46	8	5	1
0.10	CECOM	3915	100.00	3.59					351	196	130	9
0.13	MICOM	3789	57.50	4.49					425	109	73	11
0.27	TACOM	8370	106.38	5.05					1057	445	297	26
0.11	TROSCOM	257	80.00	6.00					39	10	7	1
	SUB-TOT	17033							1952	780	520	49

COSTS	TOTAL S-TONS	TOTAL M-TONS	TOTAL PLTS	TOTAL CTNS	LOAD RATE	TO POE	POE-POD	POD-FRK	LOAD COSTS	MOVE COSTS	TOTAL COSTS
MAC	2478	8644	1651	216	0	0	2140	0	0	5303462	5303462
SEA	1599	6445	1066	161	3.05	4.01	24.87	3.53	19657	208875	228532
ALOC	879	2199	585	55	19.63	22.77	102	0	17258	109694	126952
SUB TOT	2478	8644	1651	216					36915	318569	355484

SEA COST IN $ PER M-TON
MAC&ALOC COSTS IN $ PER S-TON

TRANSPORTATION COSTS
HIGH ESTIMATE

OPTION C FRIEDRICHSFELD

ANNUAL LINES	AMCCOM 0	AVSCOM 0	CECOM 39149	MICOM 6995	TACOM 0	TROSCOM 2336	TOTAL 48480					
BIN %	CMD	LINES	LNS/PKG	PKGS	CF/LN	CF/PKG	WT/LN	WT/PKG	T-MTON	T-STON	T-PLLTS	T-CTNS
0.91	AMCCOM	0	9	0	.186	1.67	4.13	37	0	0	0	0
0.86	AVSCOM	0	604	0	.289	174.56	3.99	2410	0	0	0	0
0.90	CECOM	35234	49	719	.187	9.16	5.31	260	165	94	62	4
0.85	MICOM	5946	584	10	.244	142.50	3.35	1956	36	10	7	1
0.68	TACOM	0	30	0	.396	11.88	11.11	333	0	0	0	0
0.87	TROSCOM	2032	423	5	.12	50.76	5.23	2212	6	5	4	0
	SUB-TOT	43212		734					207	109	73	5
BULK %	CMD	LINES	WT/LN	CF/LN								
0.01	AMCCOM	0	1429.00	115.76					0	0	0	0
0.02	AVSCOM	0	832.25	115.83					0	0	0	0
0.00	CECOM	0	4028.24	102.36					0	0	0	0
0.02	MICOM	140	478.99	84.34					295	34	22	7
0.04	TACOM	0	4217.90	156.79					0	0	0	0
0.01	TROSCOM	23	1119.93	112.38					66	13	9	2
	SUB-TOT	163							361	47	31	9
RACK %	CMD	LINES	WT/LN	CF/LN								
0.09	AMCCOM	0	113.03	7.20					0	0	0	0
0.12	AVSCOM	0	74.74	7.37					0	0	0	0
0.10	CECOM	3915	209.88	5.58					546	411	274	14
0.13	MICOM	909	89.26	7.36					167	41	27	4
0.27	TACOM	0	198.72	8.34					0	0	0	0
0.11	TROSCOM	257	123.51	9.24					59	16	11	1
	SUB-TOT	5081							773	467	312	19

COSTS	TOTAL S-TONS	TOTAL M-TONS	TOTAL PLLTS	TOTAL CTNS	LOAD RATE	TO POE	POE-POD	POD-FRK	LOAD COSTS	MOVE COSTS	TOTAL COSTS
MAC	623	1341	415	34	0	0	2140	0	0	1332554	1332554
SEA	47	361	31	9	3.05	0	56.71	0	1100	20450	21550
ALOC	576	980	384	24	19.63	22.77	102	0	11309	71880	83189
SUB TOT	623	1341	415	34					12409	92330	104739

SEA COST IN $ PER M-TON
MAC&ALOC COSTS IN $ PER S-TON

TRANSPORTATION COSTS
LOW ESTIMATE

OPTION C FRIEDRICHSFELD

ANNUAL LINES	AMCCOM 0	AVSCOM 0	CECOM 39149	MICOM 6995	TACOM 0	TROSCOM 2336	TOTAL 48480					
BIN %	CMD	LINES	LNS/PKG	PKGS	CF/LN	CF/PKG	WT/LN	WT/PKG	T-MTON	T-STON	T-PLLTS	T-CTNS
0.91	AMCCOM	0	9	0	.042	0.38	0.85	8	0	0	0	0
0.86	AVSCOM	0	604	0	.124	74.90	1.74	1051	0	0	0	0
0.90	CECOM	35234	49	719	.053	2.60	1.15	56	47	20	14	1
0.85	MICOM	5946	584	10	.123	71.83	1.40	818	18	4	3	0
0.68	TACOM	0	30	0	.186	5.58	5.32	160	0	0	0	0
0.87	TROSCOM	2032	423	5	.266	112.52	1.96	829	14	2	1	0
	SUB-TOT	43212		734					78	26	18	2
BULK %	CMD	LINES	WT/LN	CF/LN								
0.01	AMCCOM	0	634.51	115.76					0	0	0	0
0.02	AVSCOM	0	640.00	115.83					0	0	0	0
0.00	CECOM	0	2450.50	102.36					0	0	0	0
0.02	MICOM	140	384.00	84.34					295	27	18	7
0.04	TACOM	0	2336.00	156.79					0	0	0	0
0.01	TROSCOM	23	593.50	112.38					66	7	5	2
	SUB-TOT	163							361	34	23	9
RACK %	CMD	LINES	WT/LN	CF/LN								
0.09	AMCCOM	0	74.50	4.45					0	0	0	0
0.12	AVSCOM	0	41.10	4.69					0	0	0	0
0.10	CECOM	3915	100.00	3.59					351	196	130	9
0.13	MICOM	909	57.50	4.49					102	26	17	3
0.27	TACOM	0	106.38	5.05					0	0	0	0
0.11	TROSCOM	257	80.00	6.00					39	10	7	1
	SUB-TOT	5081							492	232	155	12

COSTS	TOTAL S-TONS	TOTAL M-TONS	TOTAL PLLTS	TOTAL CTNS	LOAD RATE	TO POE	POE-POD	POD-FRK	LOAD COSTS	MOVE COSTS	TOTAL COSTS
MAC	292	931	195	23	0	0	2140	0	0	625679	625679
SEA	34	361	23	9	3.05	4.01	24.87	3.53	1100	11687	12787
ALOC	259	570	172	14	19.63	22.77	102	0	5076	32263	37339
SUB TOT	292	931	195	23					6176	43950	50126

SEA COST IN $ PER M-TON
MAC&ALOC COSTS IN $ PER S-TON

TRANSPORTATION COSTS
HIGH ESTIMATE

OPTION C MAINZ

ANNUAL LINES	AMCCOM 3411	AVSCOM 0	CECOM 0	MICOM 0	TACOM 10850	TROSCOM 0	TOTAL 14261					
BIN %	CMD	LINES	LNS/PKG	PKGS	CF/LN	CF/PKG	WT/LN	WT/PKG	T-MTON	T-STON	T-PLLTS	T-CTNS
0.91	AMCCOM	3104	9	345	.186	1.67	4.13	37	14	6	3	0
0.86	AVSCOM	0	604	0	.289	174.56	3.99	2410	0	0	3	0
0.90	CECOM	0	49	0	.187	9.16	5.31	260	0	0	0	0
0.85	MICOM	0	584	0	.244	142.50	3.35	1956	0	0	0	0
0.68	TACOM	7378	30	246	.396	11.88	11.11	333	73	41	27	2
0.87	TROSCOM	0	423	0	.12	50.76	5.23	2212	0	0	0	0
	SUB-TOT	10482		591					87	47	33	2
BULK %	CMD	LINES	WT/LN	CF/LN								
0.01	AMCCOM	34	1429.00	115.76					99	24	16	2
0.02	AVSCOM	0	832.25	115.83					0	0	0	0
0.00	CECOM	0	4028.24	102.36					0	0	0	0
0.02	MICOM	0	478.99	84.34					0	0	0	0
0.04	TACOM	434	4217.90	156.79					1701	915	610	43
0.01	TROSCOM	0	1119.93	112.38					0	0	0	0
	SUB-TOT	468							1800	940	626	45
RACK %	CMD	LINES	WT/LN	CF/LN								
0.09	AMCCOM	307	113.03	7.20					55	17	12	1
0.12	AVSCOM	0	74.74	7.37					0	0	0	0
0.10	CECOM	0	209.88	5.58					0	0	0	0
0.13	MICOM	0	89.26	7.36					0	0	0	0
0.27	TACOM	2930	198.72	8.34					611	291	194	15
0.11	TROSCOM	0	123.51	9.24					0	0	0	0
	SUB-TOT	3236							666	308	206	17

COSTS	TOTAL S-TONS	TOTAL M-TONS	TOTAL PLLTS	TOTAL CTNS	LOAD RATE	TO POE	POE-POD	POD-FRK	LOAD COSTS	MOVE COSTS	TOTAL COSTS
MAC	1295	2553	865	64	0	0	2140	0	0	2772317	2772317
SEA	940	1800	626	45	3.05	0	56.71	0	5490	102072	107561
ALOC	356	754	239	19	19.63	22.77	102	0	6985	44396	51380
SUB TOT	1295	2553	865	64					12474	146467	158941

SEA COST IN $ PER M-TON
MAC&ALOC COSTS IN $ PER S-TON

TRANSPORTATION COSTS
LOW ESTIMATE

OPTION C MAINZ

ANNUAL LINES	AMCCOM 3411	AVSCOM 0	CECOM 0	MICOM 0	TACOM 10850	TROSCOM 0	TOTAL 14261					
BIN %	CMD	LINES	LNS/PKG	PKGS	CF/LN	CF/PKG	WT/LN	WT/PKG	T-MTON	T-STON	T-PLLTS	T-CTNS
0.91	AMCCOM	3104	9	345	.042	0.38	0.85	8	3	1	1	0
0.86	AVSCOM	0	604	0	.124	74.90	1.74	1051	0	0	1	0
0.90	CECOM	0	49	0	.053	2.60	1.15	56	0	0	0	0
0.85	MICOM	0	584	0	.123	71.83	1.40	818	0	0	0	0
0.68	TACOM	7378	30	246	.186	5.58	5.32	160	34	20	13	1
0.87	TROSCOM	0	423	0	.266	112.52	1.96	829	0	0	0	0
	SUB-TOT	10482		591					38	21	14	1
BULK %	CMD	LINES	WT/LN	CF/LN								
0.01	AMCCOM	34	634.51	115.76					99	11	7	2
0.02	AVSCOM	0	640.00	115.83					0	0	0	0
0.00	CECOM	0	2450.50	102.36					0	0	0	0
0.02	MICOM	0	384.00	84.34					0	0	0	0
0.04	TACOM	434	2336.00	156.79					1701	507	338	43
0.01	TROSCOM	0	593.50	112.38					0	0	0	0
	SUB-TOT	468							1800	518	345	45
RACK %	CMD	LINES	WT/LN	CF/LN								
0.09	AMCCOM	307	74.50	4.45					34	11	8	1
0.12	AVSCOM	0	41.10	4.69					0	0	0	0
0.10	CECOM	0	100.00	3.59					0	0	0	0
0.13	MICOM	0	57.50	4.49					0	0	0	0
0.27	TACOM	2930	106.38	5.05					370	156	104	9
0.11	TROSCOM	0	80.00	6.00					0	0	0	0
	SUB-TOT	3236							404	167	112	10

COSTS	TOTAL S-TONS	TOTAL M-TONS	TOTAL PLLTS	TOTAL CTNS	LOAD RATE	TO POE	POE-POD	POD-FRK	LOAD COSTS	MOVE COSTS	TOTAL COSTS
MAC	706	2241	471	56	0	0	2140	0	0	1510698	1510698
SEA	518	1800	345	45	3.05	4.01	24.87	3.53	5490	58334	63824
ALOC	188	442	126	11	19.63	22.77	102	0	3694	23482	27176
SUB TOT	706	2241	471	56					9184	81816	91000

SEA COST IN $ PER M-TON
MAC&ALOC COSTS IN $ PER S-TON

TRANSPORTATION COSTS
HIGH ESTIMATE

OPTION C NCAD

ANNUAL LINES	AMCCOM	AVSCOM	CECOM	MICOM	TACOM	TROSCOM	TOTAL
	0	3297	0	22149	20150	0	45596

BIN %	CMD	LINES	LNS/PKG	PKGS	CF/LN	CF/PKG	WT/LN	WT/PKG	T-MTON	T-STON	T-PLLTS	T-CTNS
0.91	AMCCOM	0	9	0	.186	1.67	4.13	37	0	0	0	0
0.86	AVSCOM	2835	604	5	.289	174.56	3.99	2410	20	6	0	1
0.90	CECOM	0	49	0	.187	9.16	5.31	260	0	0	0	0
0.85	MICOM	18827	584	32	.244	142.50	3.35	1956	115	32	21	3
0.68	TACOM	13702	30	457	.396	11.88	11.11	333	136	76	51	3
0.87	TROSCOM	0	423	0	.12	50.76	5.23	2212	0	0	0	0
	SUB-TOT	35364		494					271	113	72	7

BULK %	CMD	LINES	WT/LN	CF/LN	T-MTON	T-STON	T-PLLTS	T-CTNS
0.01	AMCCOM	0	1429.00	115.76	0	0	0	0
0.02	AVSCOM	66	832.25	115.83	191	27	18	5
0.00	CECOM	0	4028.24	102.36	0	0	0	0
0.02	MICOM	443	478.99	84.34	934	106	71	23
0.04	TACOM	806	4217.90	156.79	3159	1700	1133	79
0.01	TROSCOM	0	1119.93	112.38	0	0	0	0
	SUB-TOT	1315			4284	1833	1222	107

RACK %	CMD	LINES	WT/LN	CF/LN	T-MTON	T-STON	T-PLLTS	T-CTNS
0.09	AMCCOM	0	113.03	7.20	0	0	0	0
0.12	AVSCOM	396	74.74	7.37	73	15	10	2
0.10	CECOM	0	209.88	5.58	0	0	0	0
0.13	MICOM	2879	89.26	7.36	530	129	86	13
0.27	TACOM	5441	198.72	8.34	1134	541	360	28
0.11	TROSCOM	0	123.51	9.24	0	0	0	0
	SUB-TOT	8716			1737	684	456	43

COSTS	TOTAL S-TONS	TOTAL M-TONS	TOTAL PLLTS	TOTAL CTNS	LOAD RATE	TO POE	POE-POD	POD-FRK	LOAD COSTS	MOVE COSTS	TOTAL COSTS
MAC	2631	6292	1750	157	0	0	2140	0	0	5629291	5629291
SEA	2631	6292	1750	157	3.05	0	56.71	0	19192	356837	376028
ALOC	0	0	0	0	19.63	22.77	102	0	0	0	0
SUB TOT	2631	6292	1750	157					19192	356837	376028

SEA COST IN $ PER M-TON
MAC&ALOC COSTS IN $ PER S-TON

TRANSPORTATION COSTS
LOW ESTIMATE

OPTION C NCAD

ANNUAL LINES	AMCCOM	AVSCOM	CECOM	MICOM	TACOM	TROSCOM	TOTAL
	0	3297	0	22149	20150	0	45596

BIN %	CMD	LINES	LNS/PKG	PKGS	CF/LN	CF/PKG	WT/LN	WT/PKG	T-MTON	T-STON	T-PLLTS	T-CTNS
0.91	AMCCOM	0	9	0	.042	0.38	0.85	8	0	0	0	0
0.86	AVSCOM	2835	604	5	.124	74.90	1.74	1051	9	2	0	0
0.90	CECOM	0	49	0	.053	2.60	1.15	56	0	0	0	0
0.85	MICOM	18827	584	32	.123	71.83	1.40	818	58	13	9	1
0.68	TACOM	13702	30	457	.186	5.58	5.32	160	64	36	24	2
0.87	TROSCOM	0	423	0	.266	112.52	1.96	829	0	0	0	0
	SUB-TOT	35364		494					130	52	33	3

BULK %	CMD	LINES	WT/LN	CF/LN								
0.01	AMCCOM	0	634.51	115.76					0	0	0	0
0.02	AVSCOM	66	640.00	115.83					191	21	14	5
0.00	CECOM	0	2450.50	102.36					0	0	0	0
0.02	MICOM	443	384.00	84.34					934	85	57	23
0.04	TACOM	806	2336.00	156.79					3159	941	628	79
0.01	TROSCOM	0	593.50	112.38					0	0	0	0
	SUB-TOT	1315							4284	1048	698	107

RACK %	CMD	LINES	WT/LN	CF/LN								
0.09	AMCCOM	0	74.50	4.45					0	0	0	0
0.12	AVSCOM	396	41.10	4.69					46	8	5	1
0.10	CECOM	0	100.00	3.59					0	0	0	0
0.13	MICOM	2879	57.50	4.49					323	83	55	8
0.27	TACOM	5441	106.38	5.05					687	289	193	17
0.11	TROSCOM	0	80.00	6.00					0	0	0	0
	SUB-TOT	8716							1056	380	254	26

COSTS	TOTAL S-TONS	TOTAL M-TONS	TOTAL PLLTS	TOTAL CTNS	LOAD RATE	TO POE	POE-POD	POD-FRK	LOAD COSTS	MOVE COSTS	TOTAL COSTS
MAC	1480	5471	985	137	0	0	2140	0	0	3167085	3167085
SEA	1480	5471	985	137	3.05	4.01	24.87	3.53	16687	177320	194007
ALOC	0	0	0	0	19.63	22.77	102	0	0	0	0
SUB TOT	1480	5471	985	137					16687	177320	194007

SEA COST IN $ PER M-TON
MAC&ALOC COSTS IN $ PER S-TON

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APPENDIX F

DISCREPANCY COST ANALYSIS

The enclosed listings represent printouts of a VISICALC program used to estimate discrepancy costs. A separate sheet is provided for each location within each alternative and for both high and low estimates.

DISCREPANCY COST
HIGH ESTIMATE
OPTION A NCAD

	AMCCOM	AVSCOM	CECOM	MICOM	TACOM	TROSCOM	TOTAL
F-LNS(A)	3411	3297	39149	29144	31000	2336	108337

BIN %	CMD	LNS/PD	DISC-RT AMC	DISC-RT COMMAND	VALUE PER LINE	TOTAL DOLLAR	LOSS RATE	TOTAL LOSS	ADMIN COST	TOTAL COST
.91	AMCCOM	3104	.0023	1	308	2199	.31	682	357	1039
.86	AVSCOM	2835	.0023	1	1456	9495	.31	2944	326	3270
0.90	CECOM	35234	.0023	1	776	62886	.31	19495	4052	23547
.85	MICOM	24772	.0023	1	1404	79995	.31	24798	2849	27647
.68	TACOM	21080	.0023	1	168	8145	.31	2525	2424	4949
.87	TROSCOM	2032	.0023	1	313	1463	.31	454	234	687
	SUB-TOT	89058						50897		61139
BULK %	CMD	LNS/PD								
.01	AMCCOM	34	.0023	1	17549	1377	.31	427	4	431
.02	AVSCOM	66	.0023	1	75805	11497	.31	3564	8	3572
0	CECOM	0	.0023	1	15997	0	.31	0	0	0
.02	MICOM	583	.0023	1	124161	166453	.31	51600	67	51668
.04	TACOM	1240	.0023	1	20145	57454	.31	17811	143	17953
.01	TROSCOM	23	.0023	1	9825	528	.31	164	3	166
	SUB-TOT	1946						73566		73789
RACK %	CMD	LNS/PD								
.09	AMCCOM	307	.0023	1	3284	2319	.31	719	35	754
.12	AVSCOM	396	.0023	1	5316	4837	.31	1500	45	1545
.1	CECOM	3915	.0023	1	2884	25968	.31	8050	450	8500
.13	MICOM	3789	.0023	1	22266	194027	.31	60148	436	60584
.27	TACOM	8370	.0023	1	762	14669	.31	4547	963	5510
.11	TROSCOM	257	.0023	1	1930	1141	.31	354	30	383
	SUB-TOT	17033						75318		77277
GRAND TOTA								199780		212205

DISCREPANY COST

OPTION A NCAD
LOW ESTIMATE

	AMCCOM	AVSCOM	CECOM	MICOM	TACOM	TROSCOM	TOTAL
F-LNS(A)	3411	3297	39149	29144	31000	2336	108337

BIN %	CMD	ANNUAL LINES	ERROR RATE	CHANGE FACTOR	VALUE PER LINE	TOTAL DOLLAR	LOSS RATE	TOTAL LOSS	ADMIN COST	TOTAL COST
.91	AMCCOM	3104	.0023	1	34	243	.31	75	357	432
.86	AVSCOM	2835	.0023	1	124	809	.31	251	326	577
0.90	CECOM	35234	.0023	1	168	13614	.31	4220	4052	8272
.85	MICOM	24772	.0023	1	356	20284	.31	6288	2849	9137
.68	TACOM	21080	.0023	1	38	1824	.31	566	2424	2990
.87	TROSCOM	2032	.0023	1	55	258	.31	80	234	314
	SUB-TOT	89058						11480		21722
BULK %										
.01	AMCCOM	34	.0023	1	7880	618	.31	192	4	196
.02	AVSCOM	66	.0023	1	28044	4253	.31	1318	8	1326
0	CECOM	0	.0023	1	9695	0	.31	0	0	0
.02	MICOM	583	.0023	1	176745	236949	.31	73454	67	73521
.04	TACOM	1240	.0023	1	4464	12731	.31	3947	143	4089
.01	TROSCOM	23	.0023	1	4623	248	.31	77	3	80
	SUB-TOT	1946						78988		79212
RACK %										
.09	AMCCOM	307	.0023	1	700	494	.31	153	35	189
.12	AVSCOM	396	.0023	1	1785	1624	.31	504	45	549
.1	CECOM	3915	.0023	1	570	5132	.31	1591	450	2041
.13	MICOM	3789	.0023	1	8201	71464	.31	22154	436	22590
.27	TACOM	8370	.0023	1	293	5641	.31	1749	963	2711
.11	TROSCOM	257	.0023	1	464	274	.31	85	30	115
	SUB-TOT	17033						26235		28194
GRAND TOTAL								116703		129127

DISCREPANCY COST

HIGH ESTIMATE
OPTION B EUROPE

	AMCCOM	AVSCOM	CECOM	MICOM	TACOM	TROSCOM	TOTAL			
F-LNS(A)	3411	3297	39149	29144	31000	2336	108337			
BIN %	CMD	LNS/PD	DISC-RT AMC	DISC-RT COMMAND	VALUL PER LINE	TOTAL DOLLAR	LOSS RATE	TOTAL LOSS	ADMIN COST	TOTAL COST
.91	AMCCOM	3104	.003	1	308	2868	.31	889	466	1355
.86	AVSCOM	2835	.003	1	1456	12385	.31	3839	425	4265
0.90	CECOM	35234	.003	1	776	82025	.31	25428	5285	30713
.85	MICOM	24772	.003	1	1404	104341	.31	32346	3716	36062
.68	TACOM	21080	.003	1	168	10624	.31	3294	3162	6456
.87	TROSCOM	2032	.003	1	313	1908	.31	592	305	896
	SUB-TOT	89058						66387		79746
BULK %	CMD	LNS/PD								
.01	AMCCOM	34	.003	1	17549	1796	.31	557	5	562
.02	AVSCOM	66	.003	1	75805	14996	.31	4649	10	4659
0	CECOM	0	.003	1	15997	0	.31	0	0	0
.02	MICOM	583	.003	1	124161	217113	.31	67305	87	67392
.04	TACOM	1240	.003	1	20145	74939	.31	23231	186	23417
.01	TROSCOM	23	.003	1	9825	689	.31	213	4	217
	SUB-TOT	1946						95955		96247
RACK %	CMD	LNS/PD								
.09	AMCCOM	307	.003	1	3284	3024	.31	938	46	984
.12	AVSCOM	396	.003	1	5316	6310	.31	1956	59	2015
.1	CECOM	3915	.003	1	2884	33872	.31	10500	587	11087
.13	MICOM	3789	.003	1	22266	253079	.31	78454	568	79023
.27	TACOM	8370	.003	1	762	19134	.31	5931	1256	7187
.11	TROSCOM	257	.003	1	1930	1488	.31	461	39	500
	SUB-TOT	17033						98241		100796
GRAND TOTA								260583		276789

DISCREPANCY COST

LOW ESTIMATE

OPTION B EUROPE

	AMCCOM	AVSCOM	CECOM	MICOM	TACOM	TROSCOM	TOTAL
F-LNS(A)	3411	3297	39149	29144	31000	2336	108337

BIN %	CMD	LNS/PD	DISC-RT AMC	DISC-RT COMMAND	VALUE PER LINE	TOTAL DOLLAR	LOSS RATE	TOTAL LOSS	ADMIN COST	TOTAL COST
.91	AMCCOM	3104	.003	1	34	317	.31	98	466	564
.86	AVSCOM	2835	.003	1	124	1055	.31	327	425	752
0.90	CECOM	35234	.003	1	168	17758	.31	5505	5285	10790
.85	MICOM	24772	.003	1	356	26457	.31	8202	3716	11918
.68	TACOM	21080	.003	1	38	2380	.31	738	3162	3900
.87	TROSCOM	2032	.003	1	55	337	.31	104	305	409
	SUB-TOT	89058						14974		28333

BULK %	CMD	LNS/PD								
.01	AMCCOM	34	.003	1	7880	806	.31	250	5	255
.02	AVSCOM	66	.003	1	28044	5548	.31	1720	10	1730
0	CECOM	0	.003	1	9695	0	.31	0	0	0
.02	MICOM	583	.003	1	176745	309063	.31	95810	87	95897
.04	TACOM	1240	.003	1	4464	16606	.31	5148	186	5334
.01	TROSCOM	23	.003	1	4623	324	.31	100	4	104
	SUB-TOT	1946						103028		103320

RACK %	CMD	LNS/PD								
.09	AMCCOM	307	.003	1	700	645	.31	200	46	246
.12	AVSCOM	396	.003	1	1785	2119	.31	657	59	716
.1	CECOM	3915	.003	1	570	6694	.31	2075	587	2663
.13	MICOM	3789	.003	1	8201	93214	.31	28896	568	29465
.27	TACOM	8370	.003	1	293	7357	.31	2281	1256	3536
.11	TROSCOM	257	.003	1	464	358	.31	111	39	149
	SUB-TOT	17033						34220		36775

GRAND TOTA								152221		168427

DISCREPANCY COST

HIGH ESTIMATE
OPTION C NCAO

	AMCCOM	AVSCOM	CECOM	MICOM	TACOM	TROSCOM	TOTAL
E-LNS(A)	0	3297	0	22149	20150	0	45596

BIN %	CMD	LNS/PD	DISC-RT AMC	DISC-RT COMMAND	VALUE PER LINE	TOTAL DOLLAR	LOSS RATE	TOTAL LOSS	ADMIN COST	TOTAL COST
.91	AMCCOM	0	.0023	1	308	0	.31	0	0	0
.86	AVSCOM	2835	.0023	1	1456	9495	.31	2944	326	3270
0.90	CECOM	0	.0023	1	776	0	.31	0	0	0
.85	MICOM	18827	.0023	1	1404	60795	.31	18846	2165	21012
.68	TACOM	13702	.0023	1	168	5294	.31	1641	1576	3217
.87	TROSCOM	0	.0023	1	313	0	.31	0	0	0
	SUB-TOT	35364						23431		27498
BULK %	CMD	LNS/PD								
.01	AMCCOM	0	.0023	1	17549	0	.31	0	0	0
.02	AVSCOM	66	.0023	1	75805	11497	.31	3564	8	3572
0	CECOM	0	.0023	1	15997	0	.31	0	0	0
.02	MICOM	443	.0023	1	124161	126502	.31	39216	51	39267
.04	TACOM	806	.0023	1	20145	37345	.31	11577	93	11670
.01	TROSCOM	0	.0023	1	9825	0	.31	0	0	0
	SUB-TOT	1315						54356		54508
RACK %	CMD	LNS/PD								
.09	AMCCOM	0	.0023	1	3284	0	.31	0	0	0
.12	AVSCOM	396	.0023	1	5316	4837	.31	1500	45	1545
.1	CECOM	0	.0023	1	2884	0	.31	0	0	0
.13	MICOM	2879	.0023	1	22266	147458	.31	45712	331	46043
.27	TACOM	5441	.0023	1	762	9535	.31	2956	626	3582
.11	TROSCOM	0	.0023	1	1930	0	.31	0	0	0
	SUB-TOT	8716						50167		51170
GRAND TOTA								127955		133175

DISCREPANY COST

OPTION C NCAD
LOW ESTIMATE

	AMCCOM	AVSCOM	CECOM	MICOM	TACOM	TROSCOM	TOTAL
F-LNS(A)	0	3297	0	22149	20150	0	45596

BIN %	CMD	ANNUAL LINES	ERROR RATE	CHANGE FACTOR	VALUE PER LINE	TOTAL DOLLAR	LOSS RATE	TOTAL LOSS	ADMIN COST	TOTAL COST
.91	AMCCOM	0	.0023	1	34	0	.31	0	0	0
.86	AVSCOM	2835	.0023	1	124	809	.31	251	326	577
0.90	CECOM	0	.0023	1	168	0	.31	0	0	0
.85	MICOM	18827	.0023	1	356	15415	.31	4779	2165	6944
.68	TACOM	13702	.0023	1	38	1186	.31	368	1576	1943
.87	TROSCOM	0	.0023	1	55	0	.31	0	0	0
	SUB-TOT	35364						5397		9464
BULK %										
.01	AMCCOM	0	.0023	1	7880	0	.31	0	0	0
.02	AVSCOM	66	.0023	1	28044	4253	.31	1318	8	1326
0	CECOM	0	.0023	1	9695	0	.31	0	0	0
.02	MICOM	443	.0023	1	176745	180077	.31	55824	51	55875
.04	TACOM	806	.0023	1	4464	8275	.31	2565	93	2658
.01	TROSCOM	0	.0023	1	4623	0	.31	0	0	0
	SUB-TOT	1315						59708		59859
RACK %										
.09	AMCCOM	0	.0023	1	700	0	.31	0	0	0
.12	AVSCOM	396	.0023	1	1785	1624	.31	504	45	549
.1	CECOM	0	.0023	1	570	0	.31	0	0	0
.13	MICOM	2879	.0023	1	8201	54312	.31	16837	331	17168
.27	TACOM	5441	.0023	1	293	3666	.31	1137	626	1762
.11	TROSCOM	0	.0023	1	464	0	.31	0	0	0
	SUB-TOT	8716						18477		19479
GRAND TOTAL								83582		88802

DISCREPANCY COST

HIGH ESTIMATE
OPTION C MAINZ

F-LNS(A)	AMCCOM 3411	AVSCOM 0	CECOM 0	MICOM 0	TACOM 10850	TROSCOM 0	TOTAL 14261			
BIN %	CMD	LNS/PD	DISC-RT AMC	DISC-RT COMMAND	VALUE PER LINE	TOTAL DOLLAR	LOSS RATE	TOTAL LOSS	ADMIN COST	TOTAL COST
.91	AMCCOM	3104	.003	1	308	2868	.31	889	466	1355
.86	AVSCOM	0	.003	1	1456	0	.31	0	0	0
0.90	CECOM	0	.003	1	776	0	.31	0	0	0
.85	MICOM	0	.003	1	1404	0	.31	0	0	0
.68	TACOM	7378	.003	1	168	3719	.31	1153	1107	2259
.87	TROSCOM	0	.003	1	313	0	.31	0	0	0
	SUB-TOT	10482						2042		3614
BULK %	CMD	LNS/PD								
.01	AMCCOM	34	.003	1	17549	1796	.31	557	5	562
.02	AVSCOM	0	.003	1	75805	0	.31	0	0	0
0	CECOM	0	.003	1	15997	0	.31	0	0	0
.02	MICOM	0	.003	1	124161	0	.31	0	0	0
.04	TACOM	434	.003	1	20145	26229	.31	8131	65	8196
.01	TROSCOM	0	.003	1	9825	0	.31	0	0	0
	SUB-TOT	468						8688		8758
RACK %	CMD	LNS/PD								
.09	AMCCOM	307	.003	1	3284	3024	.31	938	46	984
.12	AVSCOM	0	.003	1	5316	0	.31	0	0	0
.1	CECOM	0	.003	1	2884	0	.31	0	0	0
.13	MICOM	0	.003	1	22266	0	.31	0	0	0
.27	TACOM	2930	.003	1	762	6697	.31	2076	439	2515
.11	TROSCOM	0	.003	1	1930	0	.31	0	0	0
	SUB-TOT	3236						3014		3499
GRAND TOTA								13743		15871

DISCREPANY COST

OPTION C MAINZ
LOW ESTIATE

F-LNS (A)	AMCCOM 3411	AVSCOM 0	CECOM 0	MICOM 0	TACOM 10850	TROSCOM 0	TOTAL 14261			
BIN %	CMD	ANNUAL LINES	ERROR RATE	CHANGE FACTOR	VALUE PER LINE	TOTAL DOLLAR	LOSS RATE	TOTAL LOSS	ADMIN COST	TOTAL COST
.91	AMCCOM	3104	.003	1	34	317	.31	98	466	564
.86	AVSCOM	0	.003	1	124	0	.31	0	0	0
0.90	CECOM	0	.003	1	168	0	.31	0	0	0
.85	MICOM	0	.003	1	356	0	.31	0	0	0
.68	TACOM	7378	.003	1	38	833	.31	258	1107	1365
.87	TROSCOM	0	.003	1	55	.0	.31	0	0	0
	SUB-TOT	10482						356		1929
BULK %										
.01	AMCCOM	34	.003	1	7880	806	.31	250	5	255
.02	AVSCOM	0	.003	1	28044	0	.31	0	0	0
0	CECOM	0	.003	1	9695	0	.31	0	0	0
.02	MICOM	0	.003	1	176745	0	.31	0	0	0
.04	TACOM	434	.003	1	4464	5812	.31	1802	65	1867
.01	TROSCOM	0	.003	1	4623	0	.31	0	0	0
	SUB-TOT	468						2052		2122
RACK %										
.09	AMCCOM	307	.003	1	700	645	.31	200	46	246
.12	AVSCOM	0	.003	1	1785	0	.31	0	0	0
.1	CECOM	0	.003	1	570	0	.31	0	0	0
.13	MICOM	0	.003	1	8201	0	.31	0	0	0
.27	TACOM	2930	.003	1	293	2575	.31	798	439	1238
.11	TROSCOM	0	.003	1	464	0	.31	0	0	0
	SUB-TOT	3236						998		1484
GRAND TOTAL								3406		5534

DISCREPANCY COST

HIGH ESTIMATE
OPTION C FRIEDRICHSFELD

	AMCCOM	AVSCOM	CECOM	MICOM	TACOM	TROSCOM	TOTAL			
F-LNS(A)	0	0	39149	6995	0	2336	48480			
BIN %	CMD	LNS/PD	DISC-RT AMC	DISC-RT COMMAND	VALUE PER LINE	TOTAL DOLLAR	LOSS RATE	TOTAL LOSS	ADMIN COST	TOTAL COST
.91	AMCCOM	0	.003	1	308	0	.31	0	0	0
.86	AVSCOM	0	.003	1	1456	0	.31	0	0	0
0.90	CECOM	35234	.003	1	776	82025	.31	25428	5285	30713
.85	MICOM	5946	.003	1	1404	25043	.31	7763	892	8655
.68	TACOM	0	.003	1	168	0	.31	0	0	0
.87	TROSCOM	2032	.003	1	313	1908	.31	592	305	896
	SUB-TOT	43212						33783		40265
BULK %	CMD	LNS/PD								
.01	AMCCOM	0	.003	1	17549	0	.31	0	0	0
.02	AVSCOM	0	.003	1	75805	0	.31	0	0	0
0	CECOM	0	.003	1	15997	0	.31	0	0	0
.02	MICOM	140	.003	1	124161	52110	.31	16154	21	16175
.04	TACOM	0	.003	1	20145	0	.31	0	0	0
.01	TROSCOM	23	.003	1	9825	689	.31	213	4	217
	SUB-TOT	163						16368		16392
RACK %	CMD	LNS/PD								
.09	AMCCOM	0	.003	1	3284	0	.31	0	0	0
.12	AVSCOM	0	.003	1	5316	0	.31	0	0	0
.1	CECOM	3915	.003	1	2884	33872	.31	10500	587	11087
.13	MICOM	909	.003	1	22266	60743	.31	18830	136	18967
.27	TACOM	0	.003	1	762	0	.31	0	0	0
.11	TROSCOM	257	.003	1	1930	1488	.31	461	39	500
	SUB-TOT	5081						29792		30554
GRAND TOTA								79942		87211

DISCREPANY COST

OPTION C FRIEDRICHSFELD
LOW ESTIATE

	AMCCOM	AVSCOM	CECOM	MICOM	TACOM	TROSCOM	TOTAL
F-LNS(A)	0	0	39149	6995	0	2236	48380

BIN %	CMD	ANNUAL LINES	ERROR RATE	CHANGE FACTOR	VALUE PER LINE	TOTAL DOLLAR	LOSS RATE	TOTAL LOSS	ADMIN COST	TOTAL COST
.91	AMCCOM	0	.003	1	34	0	.31	0	0	0
.86	AVSCOM	0	.003	1	124	0	.31	0	0	0
0.90	CECOM	35234	.003	1	168	17758	.31	5505	5285	10790
.85	MICOM	5946	.003	1	356	6350	.31	1969	892	2860
.68	TACOM	0	.003	1	38	0	.31	0	0	0
.87	TROSCOM	1945	.003	1	55	322	.31	100	292	392
	SUB-TOT	43125						7573		14042
BULK %										
.01	AMCCOM	0	.003	1	7880	0	.31	0	0	0
.02	AVSCOM	0	.003	1	28044	0	.31	0	0	0
0	CECOM	0	.003	1	9695	0	.31	0	0	0
.02	MICOM	140	.003	1	176745	74180	.31	22996	21	23017
.04	TACOM	0	.003	1	4464	0	.31	0	0	0
.01	TROSCOM	22	.003	1	4623	310	.31	96	3	99
	SUB-TOT	162						23092		23116
RACK %										
.09	AMCCOM	0	.003	1	700	0	.31	0	0	0
.12	AVSCOM	0	.003	1	1785	0	.31	0	0	0
.1	CECOM	3915	.003	1	570	6694	.31	2075	587	2663
.13	MICOM	909	.003	1	8201	22373	.31	6936	136	7072
.27	TACOM	0	.003	1	293	0	.31	0	0	0
.11	TROSCOM	246	.003	1	464	342	.31	106	37	143
	SUB-TOT	5070						9117		9878
GRAND TOTAL								39782		47036

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APPENDIX G

TASKER AND STUDY PLAN

DEPARTMENT OF THE ARMY

U. S. ARMY MATERIEL SYSTEMS ANALYSIS ACTIVITY
Aberdeen Proving Ground, Maryland 21005

OFFICE OF THE DIRECTOR

AMXSY-LP

8 MAR 1985

SUBJECT: Study of PPP in Europe

Commander
US Army Materiel Command
ATTN: AMCSM-PSP (Mr. Rex Hoobler)
5001 Eisenhower Avenue
Alexandria, VA 22333-0001

1. Reference, letter, AMCSM-PSP, SAB dated 13 February 1985.

2. Reference 1 requested that AMSAA conduct a cost benefit analysis of establishing a Package Processing Point in Europe. A study plan which outlines our approach to this effort, as well as the study milestones, is at Enclosure 1.

3. Request that you review the proposed study plan and provide your comments to us at your earliest convenience. It should be noted that the enclosed study plan assumes that a full scale evaluation is needed to answer the questions raised by the Commanding General. If, however, during the course of the evaluation, the preponderance of evidence provides a clear answer to these questions, such data and analysis will immediately be made available to you and a decision can be made as to whether it is desirable to terminate the study effort.

4. The AMSAA points of contact for this effort are Mr. Richard Abeyta (AV 687-3568) or Mr. Dave Shaffer (AV 283-6471).

FOR THE DIRECTOR:

David H. Gilbert

1 Encl
as

DAVID H. GILBERT
Chief
Logistics and Readiness
Analysis Division

RESEARCH AND TECHNOLOGY WORK UNIT SUMMARY				1. AGENCY ACCESSION*	2. DATE OF SUMMARY* 85 03 05	REPORT CONTROL SYMBOL DD-DR&E(AR)636
3. DATE PREV SUM'RY	4. KIND OF SUMMARY A-NEW	5. SUMMARY SCTY* U	6. WORK SECURITY* S	7. REGRADING*	8a. DISP'N INSTR'N NL	8b. SPECIFIC DATA-CONTRACTOR ACCESS ☐ YES ☐ NO	9. LEVEL OF SUM A. WORK UNIT

10. NO./CODES:*	PROGRAM ELEMENT	PROJECT NUMBER	TASK AREA NUMBER	WORK UNIT NUMBER
a. PRIMARY				
b. CONTRIBUTING				
c. CONTRIBUTING				

11. TITLE (Precede with Security Classification Code)*

(U) Evaluation of Establishing a Package Processing Point (PPP) in Europe

12. SCIENTIFIC AND TECHNOLOGICAL AREAS*

C09100 Logistics; 011700 Operations Research

13. START DATE	14. ESTIMATED COMPLETION DATE	15. FUNDING AGENCY	16. PERFORMANCE METHOD
85 03	85 09	DA	C-In-House

17. CONTRACT GRANT

a. DATES/EFFECTIVE: EXPIRATION:

b. NUMBER:*

c. TYPE: d. AMOUNT:

e. KIND OF AWARD f. CUM. AMT.

18. RESOURCES ESTIMATE		a. PROFESSIONAL MAN YRS	b. FUNDS (In thousands)
FISCAL YEAR	PRECEDING FY85	.9	
	CURRENT FY86	-	

19. RESPONSIBLE DOD ORGANIZATION

NAME:* Commander
US Army Materiel Command

ADDRESS:* ATTN: AMCSM-PSP
Alexandria, VA 22333

RESPONSIBLE INDIVIDUAL

NAME: Mr. Rex Hoobler

TELEPHONE: AV 284-9617

20. PERFORMING ORGANIZATION

NAME:* US Army Materiel Systems Analysis Activity

ADDRESS:* ATTN: AMXSY-LLSO
Ft. Lee, VA

PRINCIPAL INVESTIGATOR (Furnish SSAN if U.S. Academic Institution)

NAME:* Mr. Richard Abeyta

TELEPHONE: AV 687-3568

SOCIAL SECURITY ACCOUNT NUMBER:

ASSOCIATE INVESTIGATORS

NAME:

NAME:

21. GENERAL USE

4-S

22. KEYWORDS (Precede EACH with Security Classification Code)

(U) Initial Provisioning; (U) Supply; (U) Repair Parts; (U) Packaging

23. TECHNICAL OBJECTIVE,* 24. APPROACH, 25. PROGRESS (Furnish individual paragraphs identified by number. Precede text of each with Security Classification Code.)

23. (U) Technical Objective: The purpose of this study is to evaluate the costs and benefits which would result from establishing a Package Processing Point (PPP) in Europe. Study results will be used by the CG, AMC to determine whether such an approach would be beneficial to the Army.

24. (U) Approach:

(1) Requirement for study established by letter, AMCSM-PSP, Subject: Study of PPP in Europe, dated 13 Feb 85.

(2) Background: The Total Package/Unit Materiel Fielding Concept (TP/UMF) is a concept which was developed in the early 1980s and approved for limited implementation in FY84. The objective of TP/UMF is to provide a mechanism by which AMC can field equipment/materiel with 100 percent of its logistics support. Under TP/UMF procedures, support requirements are identified and negotiated between AMC and the gaining command. Once these items are identified, they are then centrally requisitioned and funded by AMC. Assets for each support package are directed to the appropriate Area-Oriented Depot (AOD) where a Package Processing Point (PPP) has been established to receive and stage all support items. When the package is complete the PPP then packages the materiel and prepares to hand it off to the user. In the case of Europe, a PPP facility has been designed and implemented at New Cumberland Army Depot (NCAD) to support all new equipment fieldings to that theater.

* Available to contractors upon originator's approval

DD FORM 1498 PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE DD FORMS 1498A 1 NOV 65 AND 1498-1 1 MAR 68 (FOR ARMY USE) ARE OBSOLETE

* U.S. GOVERNMENT PRINTING OFFICE 1982 - 361-646/8360

During a recent visit to USAREUR, the CG AMC found that new equipment items were being staged twice. For example, the M915A1 truck was staged at Mainz army depot while the parts were staged first at NCAD and then also at Mainz to marry with the trucks. The question was asked as to whether it would be beneficial to the Army to collect the parts at Mainz and thus eliminate the need to stage the parts twice.

During the initial concept study for the TP/UMF system, an economic analysis was conducted to evaluate the costs of establishing a PPP facility in USAREUR vs CONUS. At that time, it was estimated that facility costs would be approximately $2.4 million and personnel costs would vary between 1.7 and 2.8 million dollars per year. These estimates were based on the acquisition of additional warehouse space and hiring additional local nationals to support the workload. Under this approach, USAREUR would be required to fund both the set-up and operation of the PPP facility.

The proposal being evaluated in the study would retain the responsibilities for the PPP in AMC. However, in this case, facilities and personnel at Mainz Army Depot would be used to accomplish the mission.

Some of the advantages and disadvantages which would have to be considered are as follows:

- Package could be consolidated at one location. Alleviates incremental shipments and eliminates the free flow of materiel after the package is closed.
- Eliminates costs currently associated with PPP facility in NCAD (in support of Europe).
- European facility could be expanded to serve other functions, i.e., repository for Statement of Quality and Support/Special Support Services Warranty Parts, reparable return collection point, etc.
- European packages can be shifted or redirected at last minute.
- Could facilitate information flow between USAREUR and AMC concerning fielding acceptance criteria.
- AMC facilities would have to be developed in Europe.
- Such a move may create a negative reaction to a "depot" in Europe.
- Limits DA ability to redirect scarce resources between theaters.
- Does not eliminate the need for a PPP facility at NCAD. Even if European workload is moved, NCAD facility will still be required to consolidate CONUS fieldings.
- Access to and vulnerability of the packages during hostile activities.

(3) Approach:

a. Review TP/UMF policies and procedures. Determine administrative changes which would have to be made to implement European alternative.

b. Determine workload projections for FY 86-90 for new equipment fieldings to Europe and CONUS.

c. Determine if additional investment costs are needed to accomplish both European and CONUS workload at NCAD. What are investments needed to accomplish CONUS workload only?

d. Determine investment costs (facilities and equipment) to establish a PPP facility at Mainz.

e. Determine whether more than one facility would be needed in Europe to support new equipment fieldings. Currently there are five staging areas in Europe for new equipment. Should a PPP facility be established at each location?

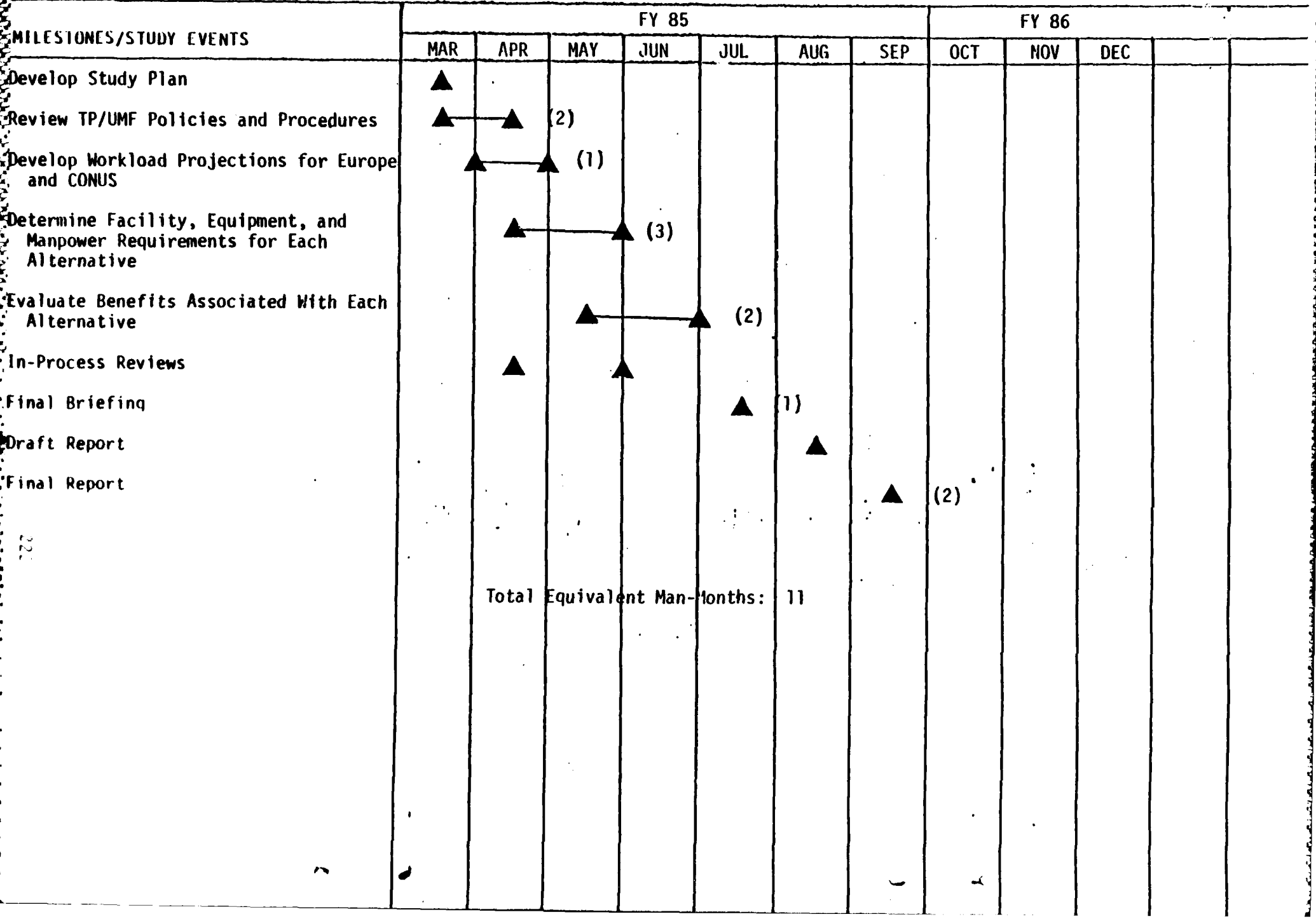
f. Calculate operating and support costs for operations at both NCAD and Mainz. If multiple European facilities are required, calculate total operating and support costs of all facilities.

g. Where possible, quantify benefits/disadvantages associated with each alternative.

(4), (5), (6) Not applicable to this study

(7) Major milestones/study events are provided on the attached chart.

EVALUATION OF ESTABLISHING A PACKAGE PROCESSING POINT (PPP) IN EUROPE



DEPARTMENT OF THE ARMY
HEADQUARTERS US ARMY MATERIEL DEVELOPMENT AND READINESS COMMAND
5001 EISENHOWER AVENUE, ALEXANDRIA, VA. 22333

AMCSM-PSP

13 FEB 1985

SUBJECT: Study of PPP in Europe

Director
US Army Materiel Systems Analysis Activity
ATTN: AMXSY-L
Aberdeen Proving Ground, MD 21005-5071

1. The Commanding General, AMC desires that a Cost Benefit Analysis Study be conducted to determine if a Package Processing Point (PPP) should be established in Europe.

2. A copy of an Information Paper written by AMC-Europe in response to General Thompson's query is attached for information. Additional factors which should be considered as disadvantages are listed below:

a. Pro advantage a(4) at Encl 1 becomes disadvantage in the event DA or OSD must redirect scarce resources to another crisis ~~environment~~.

b. PPP at NCAD would still be needed to support the CONUS East Coast region.

c. Economics from shipping containerized loads for specific consignee in USAREUR will be lost.

3. Request you initiate a study of this proposal and provide both estimated costs and completion date and milestones to this headquarters by 5 Mar 85. The results of the study should provide quantitative answer to the issue raised by the Commanding General.

4. Point of Contact at this headquarters is Rex Hoobler, AMCSM-PSP, AUTOVON 284-617.

FOR THE COMMANDER:

SIGNED

Granted extension to 12 Mar
Per conversation w/ Dave Shaffer.

1 Encl
as

HERMAN L. BROOKS
Colonel, GS
Chief, Supply Division
DCS for Supply, Maintenance
and Transportation

INFORMATION PAPER

SUBJECT: CDR AMC/USAREUR Trip Report, dated 29 Oct 84, paragraph 5.o.

ISSUE: When systems are fielded under the Total Package/Unit Materiel Fielding concept, why do we pre-stage equipment twice? For the M915A1, we pre-staged parts at NCAD and then pre-staged at Mainz to marry parts to the trucks. Wouldn't it be wiser to have done everything one time at Mainz? Pros and Cons.

CURRENT STATUS:

1. Background. During the concept development for TP/UMF, the idea of an OCONUS package processing point was considered. A decision was made to develop the current procedure; the result is Circular No. 700xxx, Total Package/ Unit Materiel Fielding Policies and Procedures.

2. Pros and cons of OCONUS package processing point:

a. Advantages.

(1) Allow the total package to be consolidated at one point. Alleviates incremental shipments and eliminates free flow after the package is closed.

(2) Eliminates warehousing, storage and packaging costs to package processing point at NCAD by direct shipment to Europe.

(3) Could serve as a repository for Statement of Quality and Support/ Special Support Services warranty parts in Europe.

(4) Allows shifts of stocked quantities to support short notice schedule changes or to tailor packages at the last minute.

(5) Could facilitate the information flow between USAREUR and AMC as to system versus fielding acceptance criteria.

b. Disadvantages.

(1) An AMC facility would have to be developed as one is currently not available for this requirement.

(2) May create a negative reaction to a "depot" in Europe.

RECOMMENDED ACTION: The Army Materiel Systems Analysis Activity (AMSAA) be tasked to conduct a cost benefit analysis of establishing a package processing point in Europe, to include, in the evaluation of multiple pre-staging of [illegible]

Mr. Carbone/AMXEL-PA/[illegible]

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GIST

AMSAA

TITLE

Unit Materiel Fielding Point, Europe

BRIEFING ____ REPORT X

THE PRINCIPAL FINDINGS and recommendations of the work reported herein are as follows:

1. Since Europe fieldings account for only 50 percent of the Unit Materiel Fielding Point (UMFP) workload at NCAD, a separate facility will be needed at NCAD irrespective of the site chosen to process lines for Europe.

2. Current Total Package/Unit Materiel Fielding (TP/UMF) operating procedures foster multiple handling processes such that surveillance costs exceed discrepancy cost avoidance.

3. The establishment of facilities in Europe will result in cost savings (6-year payback period) only when collocated at the staging site. These same savings can be achieved by eliminating redundant handling under the current system.

4. Limiting factors exist which would restrict operations of facilities in Europe.

THE MAIN ASSUMPTIONS on which the analysis is based are:

1. That future distributions by fielding command will remain at levels experienced in FY 83-85.

2. That tasks performed by personnel of the UMFP, the staging sites, and the hand-off points will remain those described in DA Circular 700-85-2, TP/UMF Policies and Procedures, dated June 1985.

3. That the AMC staging sites in Europe will continue to be TP/UMF Policies and Procedures located at Mainz and Friedricksfeld.

THE PRINCIPAL LIMITATIONS of this which may affect the findings are as follows:

1. The projected UMFP workload covers the time period 1 July 1985 through 30 June 1987. The projections were based on data maintained and updated by DESCOM. The accuracy of these forecasts could not be verified.

2. The percentages of lines by storage category, (i.e.; bin, rack, bulk) average weight, and average cubes were based on 1984 data in the Army Materiel Data File (AMDF). This data could not be verified.

THE SCOPE OF THE STUDY was limited to equipment and supplies distributed under the TP/UMF concept.

THE STUDY OBJECTIVE was to identify the costs and benefits of establishing a UMFP in Europe.

THE BASIC APPROACH. Three alternatives were reviewed: retention of UMFP at NCAD, establishment of central UMFP in Europe, establishment of UMFPs at each AMC controlled staging site in Europe. Transportation, discrepancy, operating and facility costs were estimated and compared for each alternative. Qualitative factors were also identified and compared.

THE REASONS FOR PERFORMING THE STUDY. Concern was expressed within AMC-Europe that materiel for unit materiel fieldings were being staged twice, resulting in duplicate effort in CONUS and Europe. The hypothesis was that it was more cost effective to perform the UMFP function in Eurpoe. If this hypothesis were proved to be true, then the UMFP should be moved from NCAD to Europe.

STUDY IMPACT STATEMENT. The study concluded that the most cost effective alternative is to retain the UMFP at NCAD.

THE STUDY SPONSOR was the US Army Materiel Command, DCS for Supply, Maintenance, and Transportation.

THE STUDY EFFORT was initially directed by Ms. Maxine Richter, DCS for Supply, Maintenance, and Transportation, and later by Mrs. Molly Quackenbush, AMC-EUR Liaison Office.

ADDRESS FOR COMMENTS AND QUESTIONS. Director, AMSAA, ATTN: AMXSY-LLSO, Mr. Dave Dryden or Mr. Richard Abeyta.

DTIC ACCESSION NUMBER OF FINAL REPORT. DA308939

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